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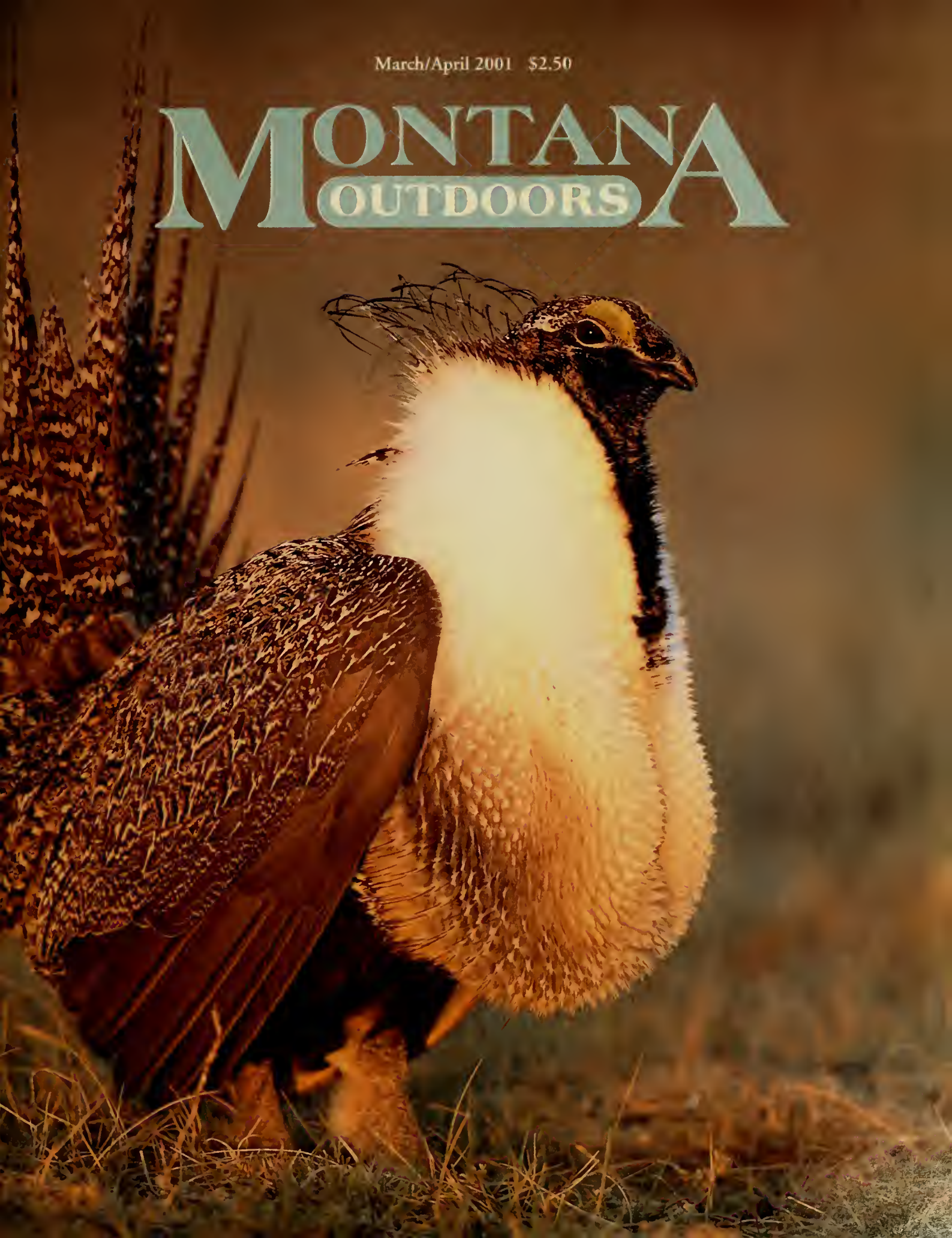
MONTANA OUTDOORS



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1901 2001
Montana Fish, Wildlife & Parks

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MONTANA OUTDOORS

MARCH/APRIL 2001 VOLUME 32, NUMBER 2

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MONTANA FISH, WILDLIFE & PARKS

2000 Annual Report

The 100 years of conservation success we celebrate in 2001 was shaped by values we hold in common as Montanans:

- Respect for and a commitment to conserve wildlife and fish and the open spaces they need to survive.
- Recognition that certain natural, recreational, cultural, and historical features are the heart of Montana and should be set aside as state parks.
- Appreciation for the fragility of our fish, wildlife, and parks—renewable in many cases, but limited in the amount of use they can withstand.
- Leadership in viewing responsible conservation and management as an investment in our future.

We are proud of our conservation work, but these successes also bring a new set of challenges. How will we negotiate a coexistence between humans and wildlife as more people move into the traditional ranges of grizzly and black bear, deer, and mountain lions? Can we find ways to fund conservation that benefits all people, not only hunters and anglers? How will we balance future resident and nonresident use of the resources and resolve our financial dependence on nonresidents? How will we manage recreational conflicts caused by multiple uses of the resources? Can we maintain and extend the conservation of the past as we grow economically and in population?

In the coming years, the solutions will be found in the collective work of many who may hold differing views but who share common values. As in the past, these values will be our North Star, equipping us to navigate a future where conservation will occur in the minds of the people as much as in the mountains, on elk winter ranges, in state parks, and on the headwaters of our major rivers.

Pat Graham
Montana Fish, Wildlife & Parks
Director—1993-2000

Stan Meyer
Montana Fish, Wildlife & Parks
Commission Chairman—1993-2000

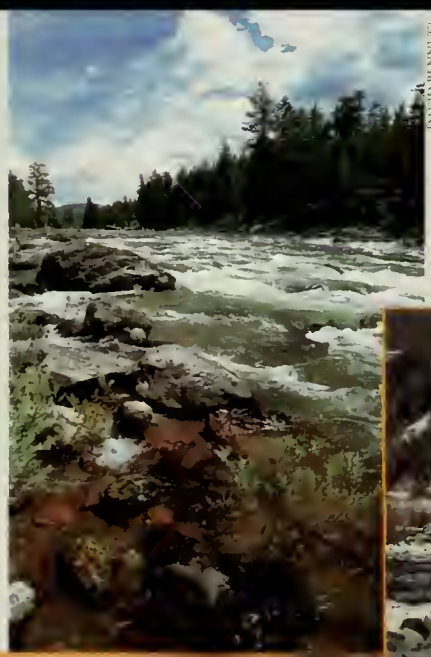
DONALD M. JONES

IN STRIVING TO REACH OUR GOALS WE PROVIDE QUALITY

opportunities

DONALD M. JONES

JOHN R. FORD



DAVID BENNETT

PAUL UPDIKE

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The Block Management Program offers hunting access to nearly 8 million acres of private land enrolled by over 1,000 landowners. In 2000, new funding from a nonresident upland game bird license-fee increase allowed for growth and improved management to disperse hunting pressure.

Access Montana assists Montanans in using over 33 million acres of legally accessible state and federal land. The program works with landowners and land-management agencies to maintain and enhance access to isolated public lands. New forms available from state and federal land-management agencies help individuals report access problems.

Mule deer populations around the state are rebounding. Spring 2001 Adaptive Harvest Management aerial surveys of key populations will provide data to help determine the use of restrictive, moderate, or liberal hunting regulations. Decades of field research and a new understanding of environmental factors allow biologists to recommend regulations that maintain hunter opportunity and optimum deer numbers.

A new River Conflict Policy and new boating rules adopted by the FWP Commission, including no-wake zones in northwestern and west-central Montana and Tongue River Reservoir State Park, will help manage the complex social and resource issues that arise around heavily used bodies of water.

The new $20-million warm-water fish hatchery at Fort Peck is a step closer to reality with the signing of the federal Water Resources Development Act. The hatchery will support native fish recovery and provide fish for stocking, including walleyes, smallmouth bass, northern pike, and other warm-water species. The hatchery will be built on 100 acres of federal land south of the dredge cuts below Fort Peck Dam.

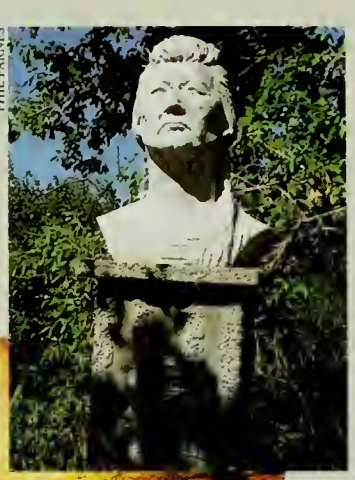
PARKS AND TRAILS...

Montana's 41 state parks hosted 1.5 million visitors in 2000; 72 percent of visitors were residents, and 84 percent of the visitation was day-use. Montana's state parks are managed and staffed by FWP with the assistance of nearly 1,400 volunteers who gave 36,268 hours of their time in 2000—the equivalent of a $213,981 contribution.

The dramatic cliffs of the buffalo jump at Ulm Pishkun State Park and the area at the base of the buffalo jump were acquired by FWP in a land exchange with the Department of Natural Resources and Conservation, ensuring this cultural feature will be preserved forever as a Montana state park. Ulm Pishkun State Park's visitor center was built in 1999.

Community grant programs for trails and facility improvements provided over $1 million in 2000 for motorized and nonmotorized trails and community recreation facilities around the state.

At Chief Plenty Coups State Park over $400,000 in restoration and preservation work since 1993 ensures this historically and culturally important site will endure. Improvements in the park are generated by the Crow Tribe, FWP, the Chief Plenty Coups Advisory Committee, interested museum experts, and the park's many dedicated friends and volunteers.


PHIL FARNES

CHUCK HANEY

MAINTAINING AND ENHANCING

the health

OF MONTANA'S NATIVE SPECIES AND HABITAT

A 140,000-acre conservation easement recently approved in the Thompson and Fisher river valleys in northwest Montana is the largest of its kind in Montana's history. The nearly $30 million agreement between FWP and Plum Creek Timber Company will be a phased acquisition drawing on hydro-electric dam mitigation funding from Bonneville Power Administration and Avista Corporation, the federal Forest Legacy Program, and a $1.6 million donation by Plum Creek. The land-conservation legacy forged by the Montana Fish, Wildlife & Parks Commission in the past eight years includes approval of 328,100 acres in conservation easements and the purchase of 33,500 acres of important wildlife habitat.

Noxious weed management and awareness expanded with the hiring of a statewide weed coordinator who makes sure FWP has access to the latest information and resources and who works to enlist hunters, anglers, and others in preventing the spread of noxious weeds during outdoor recreation. In 2000, over $230,000 in noxious weed maintenance and first-time treatments were completed on FWP lands.

JOHN FRALEY

TOM J. ULRICH

DONALD M. JONES

Big game criminal investigations are more sophisticated with more interstate collaboration than ever before. In one case, seven individuals were charged with 28 counts in a federal felony indictment following a complex state and federal investigation. Fifty percent of the primary defendant's $100,000 fine went to support Montana wildlife and 50 percent went to the National Fish and Wildlife Foundation. Sentencing of the other defendants is pending.

Innovative grizzly bear work by the "Partners In Life" program will continue with the joint support of FWP and the Montana Fish, Wildlife & Parks Foundation. The program teaches people to safely coexist with grizzlies and uses Karelian bear dogs and aversive conditioning techniques to teach bears to avoid human food sources.

Mountain lions' hidden lives are being revealed in a 10-year study of lion population dynamics and behavior in the Garnet Range east of Missoula. Researchers are monitoring population trends, predation patterns, and general health as well as how hunting and local development affect lions along the much-used Blackfoot River.

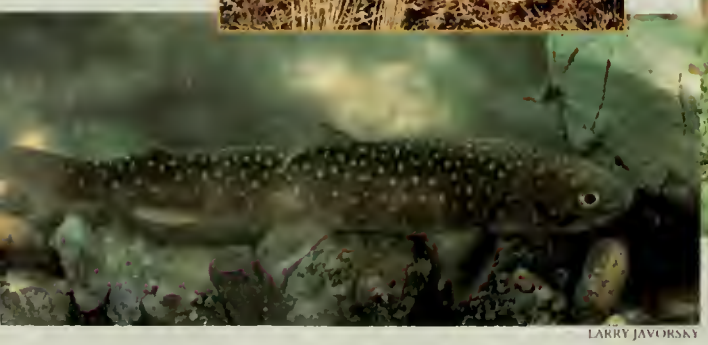
Governor Marc Racicot accepted recommendations from the 12-member Wolf Management Advisory Council addressing public interests, public safety, maintaining wildlife populations, and protecting the livestock industry. FWP will draft a management plan based on the recommendations to take effect when wolves are delisted.

Chronic Wasting Disease testing over the past two hunting seasons showed no signs of the disease in 1,030 wild elk and deer taken by hunters. The only known CWD-infected elk—nine at an alternative livestock facility near Philipsburg—were destroyed. Other periodic CWD checks of elk and deer by biologists and wardens have been negative.

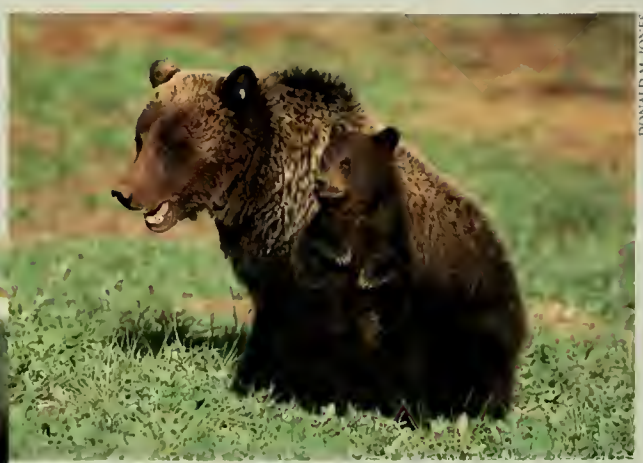
The Bull Trout Restoration Plan adopted in 2000 has broad support from state, federal, and private cooperators. In the Flathead Lake and river system, FWP and the Confederated Salish and Kootenai Tribes have adopted a co-management plan for bull trout and other species. Bull trout, a threatened species, appear to be stabilizing or increasing in the Flathead, Swan, Kootenai, and Blackfoot river drainages.

Montana's continuing effort to protect and restore the westslope cutthroat trout was reflected in the federal decision not to list the native trout as a threatened species under the Endangered Species Act. In its decision, the USFWS said it was "encouraged by ongoing and planned state and local programs, most notable those in Montana..."

PETE & ALICE BENGEYFIELD



LARRY JAVORSKY



DONALD M. JONES

Montana Fish, Wildlife & Parks

PARTNERSHIP
RESPECT
LEADERSHIP
COMMITMENT
INNOVATION

DEPARTMENT GOALS

Create an efficient and effective work environment where priorities are clear and employees are accountable, valued, and recognized for their contributions.

Provide quality opportunities for public appreciation and enjoyment of fish, wildlife, and parks resources.

Maintain and enhance the health of Montana's natural environment and of fish, wildlife, cultural, and historic resources.

Emphasize education, communication, and responsible behavior to afford Montanans the opportunity to better understand and participate in the decision-making processes that sustain our natural, recreational, and cultural resources for future generations.

COMMISSION

STAN MEYER, *Chairman*, Great Falls

DAVID W. SIMPSON, *Vice Chairman*, Hardin

DARLYNE DASCHER, Fort Peck

CHARLES R. DECKER, Libby

TIM MULLIGAN, Whitehall

fwp.state.mt.us
is FWP's award-winning home on the world-wide web. For a colorful look at Montana's latest hunting, fishing, wildlife, and parks news, please come visit us.

EMPHASIZING

education

ENGAGEMENT AND PARTNERSHIPS

The Montana Fish, Wildlife & Parks Foundation, launched in December of 1999, funds important conservation work in Montana that goes beyond the scope of traditional user-fee funding. Foundation programs emphasize education and seek a heart-felt commitment from people to be partners in preserving and protecting the riches of Montana. Link to the Foundation's home page from fwp.state.mt.us.

Montana's role-model Hunter Education Program reached nearly 8,500 students ages 12 and older with the help of over 1,500 volunteer hunter, bow hunter and trapper education instructors.

The fires of summer 2000 showered anxiety as well as ash over the state. Outdoor enthusiasts received daily updates on how the fires impacted the resources FWP manages through the FWP "Fire and Drought" web pages and a telephone hot-line. In one month, FWP responded to over 90,000 inquiries. Most big game animals were able to escape the fires, but the security and cover provided by the forest was reduced. Three major rivers were closed to angling for part of the summer and anglers, landowners, irrigators, and others worked together to maintain critical in-stream flows.

DONALD M. JONES

Montana youth ages 15 to 17 enjoyed reduced fees—a fishing license for $6.50 and resident upland game bird license for $3.00—both about 50 percent less than in previous years. In 2000, 4,647 youth fishing licenses and 959 youth bird licenses were sold. Special youth pricing will also be available in 2001.

DENVERBRYAN.COM

Over 600 women have enjoyed "Becoming An Outdoors Woman" summer and winter workshops offered by FWP since 1994. These popular opportunities provide women of all ages hands-on experience in fishing, fly-tying, archery, shotgun and rifle shooting, canoeing, map and compass reading, plant identification, and backpacking.

FWP is stepping up efforts to help black bear hunters distinguish between black and grizzly bears. Among the education efforts is an internet-based identification program at: fwp.state.mt.us/bearid.

PHOTOS BY DONALD M. JONES

Montana Fish, Wildlife & Parks

PARKS:

The Parks Division is responsible for development, maintenance, and operation of all state parks and affiliated sites with an objective of providing diverse recreational opportunities while preserving important historical and cultural resources within Montana.

WILDLIFE:

The Wildlife Division is responsible for managing all species of wildlife including big game, threatened and endangered species, upland game birds and nongame birds, and waterfowl in the state.

FISHERIES:

The Fisheries Division is responsible for the management and perpetuation of Montana's fish and other aquatic resources.

CONSERVATION EDUCATION:

The Conservation Education Division acts as a clearinghouse for information on FWP activities and news items to the media and conducts a variety of educational and recreation-safety programs.

ENFORCEMENT:

The Enforcement Division is responsible for enforcing all the fish and game laws of Montana, FWP rules, and FWP Commission regulations. Division personnel also enforce state boating and snowmobile rules and state park regulations, as well as private property laws and hunting and fishing regulations.

FIELD SERVICES:

The Field Services Division is responsible for FWP's lands program and construction projects, as well as its Block Management (public hunting access) and landowner-hunter relations programs.

ADMINISTRATION & FINANCE:

The Helena-based Director's Office staff makes major policy and administrative decisions. Regional supervisors handle on-the-ground implementation of policies and programs. The Administration and Finance Division is responsible for budgeting, accounting, purchasing, personnel, data processing, and administration of FWP's licensing functions.

REVENUE SOURCES 2001

FWP is funded primarily by user fees. Funding sources include:

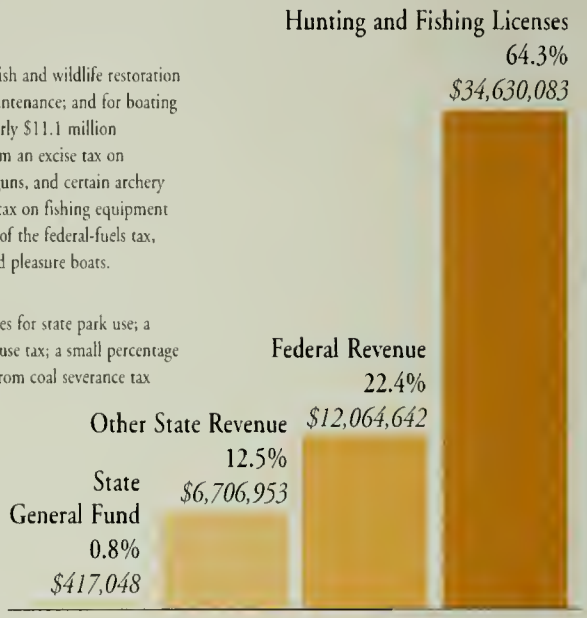
HUNTING AND FISHING LICENSES
This includes all license sales revenue, interest earnings, and other miscellaneous revenue. Nonresident sales account for nearly two-thirds of FWP's total license revenue.

FEDERAL REVENUE
FWP receives federal funds: to aid in fish and wildlife restoration efforts; for parks development and maintenance; and for boating safety, education, and regulation. Nearly $11.1 million apportioned to Montana is derived from an excise tax on sporting arms and ammunition, handguns, and certain archery equipment—as well as from an excise tax on fishing equipment and electric trolling motors, a portion of the federal-fuels tax, and import duties on fishing tackle and pleasure boats.

OTHER STATE REVENUE
Other state revenue sources include: fees for state park use; a portion of the state's lodging facilities use tax; a small percentage of the state fuel tax; interest earnings from coal severance tax receipts; and other miscellaneous revenue sources.

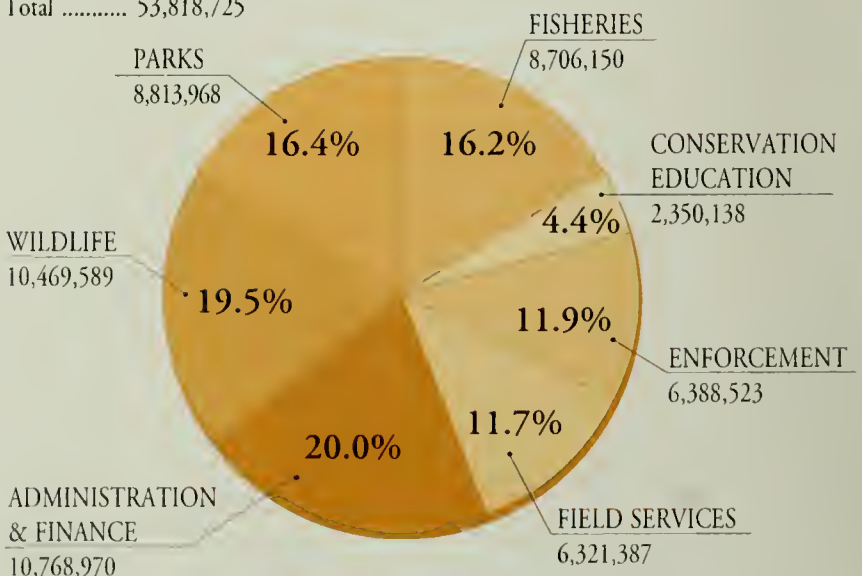
STATE GENERAL FUND
State tax dollars. Less than 1 percent of FWP's total budget comes from the general fund. About 75 percent of this funding goes to the Parks Division.

TOTAL REVENUE: $53,818,725



PLANNED EXPENDITURES 2001

FWP TOTAL:
Operating ... 45,634,900
Capital 8,183,825
Total 53,818,725



FWP SPENDS ITS MONEY TWO WAYS:

Operations for day-to-day management of fish, wildlife, and parks resources.
Capital for major repair and maintenance of FWP properties, for renovation and construction of facilities, and to protect and enhance critical habitats.

Social Arrangements by Peck & Peck

by Sam Curtis

We don't hear much about animal anarchists. Lawlessness and disorder throw human societies into chaos more often than we'd like to admit. But anarchy rarely disrupts swarms, flocks, packs, or herds.

Animals that live together establish "laws" of social behavior that allow them to coexist with a minimum of squabbling. Animal societies are often organized around a hierarchy of dominant and subordinate members that maintain order by occasionally fighting to establish a "pecking order," but mainly by displaying and communicating social etiquette that allows the group to live in relative harmony.

A wolf pack has its alpha male and female who lead the group. A queen bee is responsible for the complex and orderly humming of the hive, with its drones and workers that may number 60,000 or more. And a mule deer matriarch rides herd over her family's land which she shares with her daughters, while the males live in bachelor groups for most of the year and work out their own macho kind of social order.

The existence of social hierarchies among animals didn't dawn on students of animal behavior until Thorlief Schjelderup-Ebbe started paying attention to the antics of chickens in his Norwegian farmyard in the 1920s. He noticed that, although the chickens

Some small insects, like bees, bombardier beetles, and ladybugs (shown here), rely on sheer numbers and chemical defenses to fend off predators.

JEFFREY RICH

preferred to live in flocks rather than alone, they established a definite social order by the way they pecked one another. The head hen pecked all the other hens but was not pecked herself. The next hen in the "pecking order" pecked all the other hens except the head hen, and so on down the line until the most subordinate hen got pecked by all the other hens and was easily identified by the featherless spots polka-dotting her body.

Once this dominant/subordinate social ladder was established, Schjelderup-Ebbe discovered, the hens knew their niche in the flock, and the pecking squabbles died down to a minimum, only to erupt again when new hens were introduced to the mix. The success of this arrangement seemed to depend on the hens' ability to recognize one another so they could stay out of the way of their superiors and maintain harmony in the flock. As soon as the group numbered more than ten or twelve hens, the birds' ability to recognize which companions were dominant and which were subordinate broke down and anarchy broke out.

The discovery of a social order in a flock of chickens, and later in numerous other birds, insects, fish, and mammals, sent ethnologists looking for the benefits that might be derived by living in groups. They found that, quite aside from any dominance hierarchy that might exist, sheer numbers often work to a species' advantage. A herd of animals, for example, is much more likely to detect, intimidate, confuse, and fight off a predator than one animal living alone.

A herd of pronghorns has more eyes, ears, and noses to sense the presence of danger than a single antelope. And at any given time, chances are good that several pronghorn within the herd will be checking the surroundings for predators while the rest of the herd is feeding or occupied with other activities.

Responding to the sight of a peregrine falcon or a sparrow hawk, starlings fly in a tight flock. Faced with this intimidating concentration of birds, a falcon or hawk is unlikely to attack because a collision with anything more than a single starling could cause it serious injury.

When it comes to confusion, the individuals in a group of white-tailed deer spooked by a mountain lion may zig and zag and burst off in many different directions, causing the lion to lose its focus on its single intended prey. Consequently, all the deer may get away.

As for the advantages of numbers in fighting off potential predators, you need only stick your foot into the concealed hive of a swarm of ground-dwelling yellow jackets to feel the stunning effectiveness of a mass attack by lots of little creatures on one big one. Many insects with powerful chemical defenses, including ladybugs, bombardier beetles, and stink bugs, gather together to intimidate and otherwise cause a stink for predators.

While group living acts as a major defense against predators, it also improves the feeding efficiency of social animals. Researchers have found that flocks of birds not only find food more readily than individuals, they harvest it more

efficiently also. E.O. Wilson, in his ponderous tome titled *Sociobiology: The New Synthesis*, writes: "Insectivorous birds, such as...warblers and...flycatchers, potentially benefit from foraging in flocks because the group as a whole can beat up a higher proportion of flying insects per bird than can scattered individuals."

Likewise, wolves hunting in packs are clearly more effective at killing large prey animals like elk and moose than are wolves hunting alone. But, in addition to sheer numbers, a wolf pack benefits from a social hierarchy in which an alpha male and an alpha female dominate their offspring and keep order in the ranks. Communication among pack members helps keep conflict to a minimum. The alpha wolves maintain their positions with a language of stares, growls, bared teeth, wrinkled brows, and raised ears. Subordinates show their willingness to follow by lowering their heads and tails, flattening their ears, and rolling on their backs.

Clearly, there are special perks for the dominant member of a group, which usually attains its status by being the biggest, toughest, or showiest bug, bird, or mammal in a congregation. The bull elk with the most humongous antlers and body size typically gets to mate with the most cows, and his subordinates step aside to relinquish the best patch of grass when he feeds nearby.

Similarly, center stage goes to the most aggressive sage grouse cock strutting his stuff among other males on their traditional mating grounds. The center of the stage, or lek, is where three-quarters of the hens will want to mate.

Dominance comes with a price, however. Individuals at the top of the social ladder must be prepared to defend their status, sometimes risking injury or death. Although communication in the form of body language, vocalization, and chemical messages called pheromones (see "Animal Talk," *Montana Outdoors*, March/April 1997) helps keep fighting to a minimum, top dogs are always at risk from challengers.

So, there are certain compensations for low men on the social totem pole. A subordinate male frog waiting quietly near a dominant male who is calling for a mate can sometimes intercept a female before she reaches the head loudmouth. And bighorn rams banging their heads together for the favors of a waiting ewe are sometimes outmaneuvered by a subordinate male who tends to the female while the big guys are fighting.

But social standing is not static. The subordinate ram waiting in the wings will eventually develop a full curl to his horns, and this year's dominant ram will be next year's old man.

Also, social arrangements may vary within a species depending on its population density. "At low densities, house mice and cockroaches are territorial," writes Dr. Marion J. Hall in *Animal Behavior*, "but, as density increases, the territorial system [see "Wildlife Property Rights," *Montana Outdoors*, March/April 1996] breaks down; the amount of fighting necessary to defend a territory increases until the risks involved become too great. Instead, a dominance hierarchy is established in which the good fighters who were able to defend territories at low densities become dominants." A dominant mouse may chew off its subordinate's facial hair and clip its whiskers short as a way of showing and maintaining its lower social status.

Among some mammals, however, there are often more complex social arrangements than a straightforward dominance hierarchy or "pecking order." Studies of mule deer in the Missouri River breaks by Montana Fish, Wildlife & Parks researchers Ken Hamlin and Dick Mackie, and in the Bridger

PATRICK TOALSON/BIGSKYIMAGES.COM

Wolf packs benefit from a social hierarchy in which alpha wolves dominate and others follow. Here, a subordinate wolf expresses submissive body language by rolling on its back.

MILO BURCHAM

RODNEY SCHLECHT

Most dominance fights between mule deer bucks end quickly, with the smaller buck beating a hasty retreat. In fall and winter, groups of doe mule deer may contain three generations: a matriarch, her daughters, and granddaughters.

Mountains by Dave Pac, Dick Mackie, and Henry Jorgensen, cast some fascinating light on the complex social lives of one of Montana's most visible wildlife species.

Through these studies and others, it has become clear that the big buck may be head of the family in Disney's *Bambi*, but in reality it's the old doe that's head honcho. She is in charge of the family land; she teaches her offspring how to survive; she has a corner on the prime real estate, and she tells the bucks where to be during the rut. And, except during rut, bucks hang out together with no responsibility to their families except staying alive.

In any given mule deer area, the oldest females—the matriarchs— have established core blocks of home range in the best forage and cover available. They share these blocks with their daughters for most of the year. Within a core, however, a matriarch has her own birthing territory which only she and her newborn fawn share during the spring and early summer.

The yearling daughter is not allowed to tag along with her mother during this time because her presence might help attract predators. But she has already been taught by her mother how to use the local landscape for survival, and the home range she eventually establishes will probably overlap her mother's.

After a summer of living separately but in close proximity, the matriarch once again allows her yearling daughter, and also older daughters who may have fawns of their own, to form a matrilineal group. These groups contain at least three generations: the matriarch, her daughters, and her granddaughters. In some cases, daughters have been known to rejoin their mothers in family groups for up to eight years.

Although the existence of these groups concentrates the demand for available food and cover, the matriarchal society favors its own by passing on prime habitat to family members instead of allowing genetically unrelated deer to take over the area.

But what about the bucks? Their social arrangements tell another story. Let's go back to the spring when the matriarch is driving off her yearling offspring in preparation for fawning. While the yearling females are reluctant to leave their mothers, yearling males are ready to depart.

At this time, a yearling buck may try to join, but be driven off from, one of the buck bachelor groups in which three to five mature males typically live, physically removed from the females, for most of the year. Having been rejected by his mother and not yet accepted into the world of the "big guys," yearling bucks and does often form their own social group for the rest of the summer. By early fall, however, the mature bucks are more tolerant of their juniors, and the yearlings may start to hang out on the fringes of bachelor groups.

Although size and age determine dominance in a buck group, the deer use social etiquette to maintain equanimity. Eye contact—a form of aggressive behavior—is usually avoided by all deer except during rut. Consequently, when a number of deer bed down together, they arrange themselves so they face in different directions. This not only helps maintain group harmony, it also serves as an early warning system against the approach of danger.

The social interaction that takes place in mule deer bachelor groups comes in the form of sparring. This is usually done between two bucks of different age who are establishing a sense of their dominant and subordinate ranks in the group. With social standing defined, the two males can lock antlers and push one another around without having the athletic event turn into an all-out dominance fight. It's sort of like arm wrestling with a little brother, a way to show who is

boss without anyone getting hurt.

Sparring is much more common among the younger bucks than the older ones who have usually already clearly defined their social status within the group.

As the breeding season approaches in the fall, the social sweetness of the males turns sour. The bachelor groups disband, and the dominant bucks start to pull rank on their juniors. Although several bucks may chase the same doe, a direct stare by a dominant male is often enough to turn away a subordinate. If that isn't effective, the larger buck may lower his head and walk slowly towards the challenger. This antler display, a form of body language, is a no-nonsense way of saying, "I'm boss. Back off. Let's not waste energy on fighting."

When an all-out dominance fight does occur between equally matched bucks, they usually push and shove one another with engaged antlers for only fifteen to thirty seconds before one of them backs off and retreats. On rare occasions, the antlers of two bucks become locked together during the pushing and twisting involved in antler fighting. Unable to eat or drink, and exhausted from their frantic struggle to disengage, the bucks eventually perish in this death grip.

After the rut has wound down, the macho attitudes of the males once again gives way to a good ol' boy sociability that brings bucks back together in bachelor groups that remain separate from females for most of the rest of the year. This social separation of the sexes enhances chances for mule deer survival since it reduces male/female competition for food and cover, particularly in spring and summer when does need access to the best habitat available in order to nourish and protect their fawns.

Clearly, the social order of mule deer society is fluid. It changes seasonally and through time. As once-dominant deer grow old, younger members of the group mature and move up the social ladder to take their place. It's a complicated jockeying for position that ultimately benefits the group as a whole. That's the beauty of the sometimes simple, often complicated, social lives of animals. ■

A hard stare by a dominant muley buck is often enough to deter a subordinate.

GARY KRAMER

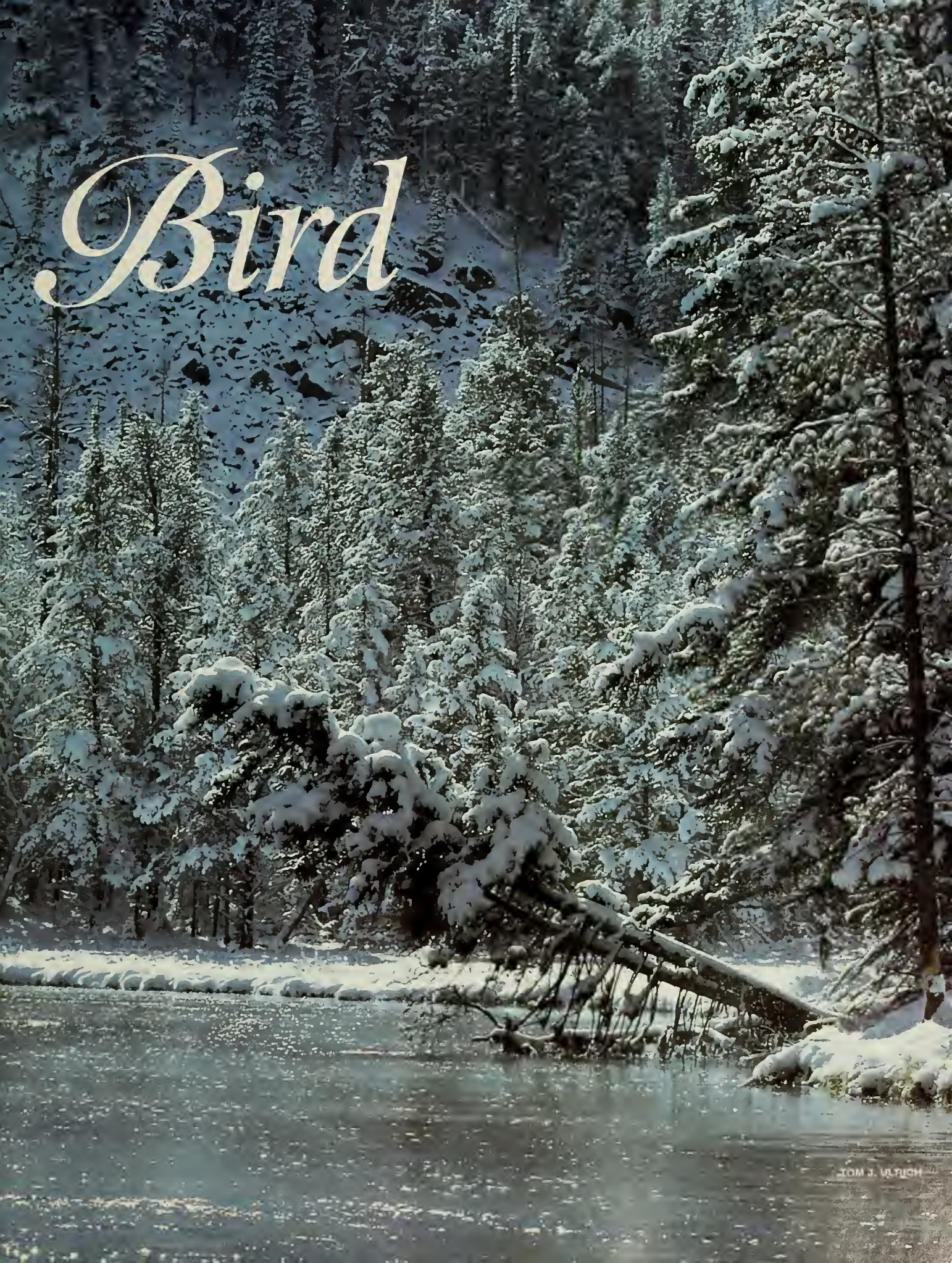
A Singular

by Jerry Kustich

The snow fell like puffs of cotton. It is a rare day in February when such storms are not accompanied by a northeast blast born in the polar regions of the Arctic. Usually such forces drain into Montana under conditions not fit for any living being, much less a fisherman, and normally it doesn't snow east of the continental divide unless a frigid wind blows hard enough to rip the skin off one's face. But this day was calm, and the portion of the lower Madison River paralleling the two-lane looked so alluring I decided to stop.

My fly rod was in the truck—it always is—and the river was enticing. I love to fish in the winter; I always have, though it is usually in the form of peering into a black, icy hole on a distant lake. But sometimes the season of cold days and long, colder nights can impart a bonus, an opportunity to step into surreal splendor, a chance to embrace the gentler side of winter while submerged knee-deep in summer memories. I proceeded to the river with fly rod in hand.

My mind drifted as I fished, and I was lost in thought until a small rainbow grabbed my nymph and danced like a silver speck on the dark waters. Its release was quick, an electric charge that sparked back into the depths until it disappeared like the flake of snow that had just melted as it landed on my reel. For the next hour I fished silently, mesmerized by an aura of white, until the mood was breached by the gentle greeting of a bird. Its lively,


Bird
TOM J. ULRICH

JAN L. WASSINK

Townsend's solitaires nest on or near the ground, often under an overhang in a bank or cliff or sheltered by roots or rocks. The female lays three or four grayish-white, spotted eggs in a loosely built nest of sticks and grass.

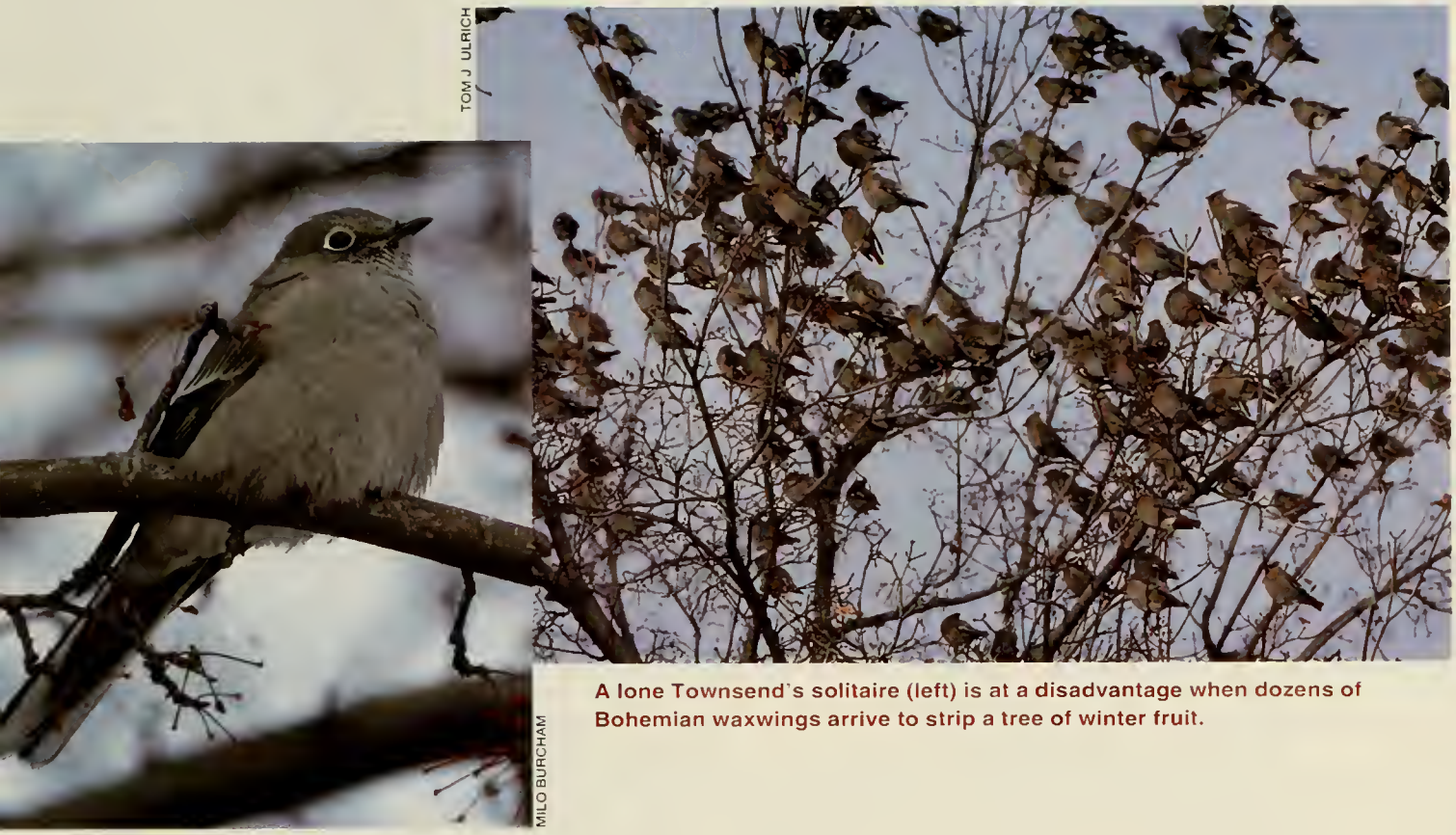
full-bodied repertoire floated lightly on the muffled stillness, accompanied by the rhythm of the passing water.

Usually it is the charcoal-clad dipper that comes calling this time of year. This rotund river dweller bounces from one rock to another, a delightful entertainer, looking under the water and around boulders for morsels to sustain it. This time, though, it was a dapper-looking gray bird, slender but fair-sized, that sat on the overhanging bough. It was distinguished by buff-colored wing patches and a white ring encircling each of its bright eyes. The outer edge of its tail feathers was white as well. Singing again, the winged visitor cheerfully faced the elements—alone—in a manner true to its name. The Townsend's solitaire spends the winter months at lower elevations throughout much of Montana. This solitary soul was in need of a friend, it seemed, so we chatted for the remainder of the afternoon.

Belonging to the thrush family, the solitaire is neither as bashful as the secretive thrushes nor as bold as another family member, the American robin; and it is definitely not as colorful as its dashing bluebird cousins. In fact, the drab overall appearance of the Townsend's solitaire likely accounts for the fact that it often goes unnoticed. Dwelling on the open edges of high-country conifer forests in summer, this true western bird descends to juniper-covered foothills and riparian habitats during the harsh times of year. To those who know and appreciate it, the Townsend's solitaire is a beautiful bird.

As the nearby bird chirped a few more notes, I was reminded of an incident that took place along the upper Beaverhead River during our local Audubon chapter's annual Christmas bird count. Off from the main group, Dr. Jack Kirkley, a professor at Western Montana College in Dillon, had come across a surly mob of magpies swooping, swatting, and pecking at a Townsend's solitaire that from a distance seemed tethered to the limb of a willow. On closer scrutiny, Jack found that the unfortunate creature was indeed attached to the bush by 18 inches of monofilament fishing line. After gingerly gathering up the bird, he saw that it had tried to eat a #16 Pheasant Tail Nymph left tangled in the willow by a passing boat fisherman. Stretching the concept of catch-and-release to new levels, Jack quickly removed the hook from the bird's small beak and let it go, much to the dismay of the magpies.

A cheerful chirp refocused my attention on the Madison. My solitary buddy was still sitting in full view—a rod's length away. In 1838 John James Audubon named this bird after the nineteenth century naturalist John K. Townsend—an honor, I'm sure, for both the man and the bird. And though it is rarely seen in flocks, small numbers of solitaires sometimes gather in the fall before leaving the mountains for



TOM J. ULRICH

MILO BURCHAM

A lone Townsend's solitaire (left) is at a disadvantage when dozens of Bohemian waxwings arrive to strip a tree of winter fruit.

lower altitudes. Normally, however, the Townsend's solitaire is seen alone. A *clink* or *tink-tink* or *peet* sound often gives away its precise location atop an evergreen. It's song, a prolonged warble, echoes over the hillsides and through the mountain draws.

It appeared I had established a special connection to the bird in front of me. Most wildlife presents itself at a distance, preferring to avoid human contact. But this solitaire not only acknowledged my existence, it seemed to desire my companionship as well. When I moved, it moved, staying with me like a faithful canine. Occasionally, the bird would hop to streamside and scoop up a mouthful of midges that formed clumps of swarming life behind the rocks. During summer, the solitaire feeds on insects in the same manner as a flycatcher, snatching them in mid-air. In winter, just making do is critical to survival. The biggest portion of its diet is vegetable matter in the form of berries, pine seeds, and willow and cottonwood buds.

The importance of this kind of food source had become apparent a few months earlier, when a Townsend's solitaire took up residence in the crab apple tree that sits in front of our picture window. Since this tree was laden with wrinkled fruit, I'm sure the bird figured life would be good until the return of spring. Needless to say, my wife and I were pleased to share our yard with such a fine visitor. As the days passed, the bird grew more comfortable with our presence, barely shifting position when we walked by. For weeks our new friend sat fat and happy, guarding its larder, until the sad day when the Bohemian waxwings arrived. Within a matter of minutes, hundreds of waxwings filled the yards throughout the neighborhood. In less than an hour those chubby invaders discovered our crab apple tree, descended upon it, and devoured every last morsel while the solitaire sat amongst them in a state of bewilderment. After the foray, we never saw our amiable resident again.

I looked at the bird sitting in front of me, and for a fleeting moment thought...could it be? But just then, the last fish of the day—a small brown trout—took my fly. Although I hadn't noticed while I'd been standing in the river, by now there were five inches of new snow on the ground. The grayness thickened as the last bits of light squeezed from the encompassing shroud until what remained seemed concentrated only in the reflections of white. The trout that I was about to release punctuated all that I had just considered throughout the afternoon.

I nodded to the Townsend's solitaire in final salute as I trudged the several hundred yards back to my truck with two inches of hard-packed snow clinging to the felt soles of my wading shoes. The bird's clear, sweet song filled my heart all the way home.

Each year many wildlife watchers visit Big Sky Country, but it is likely that the Townsend's solitaire is rarely noticed. Yet, it should be. There is something extraordinary about a bird that can survive year-round in Montana. For those who make the effort to see it, this singular bird will surely leave a lasting impression. ■

1st Place — Cliff M. Rossberg

2nd Place — Jim Borgreen

3rd Place — Alice Martin

FWP Centennial Inspires Waterfowl Stamp

by Tom Palmer

Montana's 2001 Migratory Bird Stamp will be graced by Cliff M. Rossberg's "The Helena Reaches Its Final Point," the winning entry in the state's annual waterfowl stamp competition.

In celebration of FWP's first century of conservation—and the agency's establishment in 1901—FWP wanted the 2001 "duck stamp" to depict ducks or geese flying above a steamboat of the size and vintage that traded on the Missouri River in the late 1800s. Artists were asked to place the boat in a true-to-life setting on the Missouri River in the vicinity of Fort Benton, Montana's historic steamboat port northeast of Great Falls.

In imaging the work, Rossberg, 28, created a bygone scene of a crisp autumn day and a pair of Canada geese moving upriver upon the arrival of a steamboat. "The Helena is making its last trip of the season up the mighty Missouri River to the port of Fort Benton," Rossberg explains. "Of all waterfowl species, few look as powerful and graceful as Canada geese lifting off. This piece displays the landscape at the port of Fort Benton in the late 1800s."

That it does, but it wasn't easy. Rossberg says he made three trips to Fort Benton and took rolls of photos at morning, noon, and evening to better study the port's expansive landscape. He says placing the boat in the painting presented monumental problems. "I'm a wildlife artist, I really didn't know what to do about the boat."

With the help of a local historian in Fort Benton, Rossberg studied several black and white photos of Fort Benton steamboats, but still wasn't absolutely confident he could do the entire scene justice.

"I finished the whole painting," Rossberg recalls, "and I had this space of open water for the boat and I thought, 'Oh my, I hope I don't ruin this thing.'" Far from it. The painting is a unique and fitting tribute to FWP's centennial year.

This is the ninth time Rossberg has submitted a painting to Montana's annual competition. He won the Montana competition in 1999.

A part-time pharmacist in Great Falls with a full-time passion for art, Rossberg also won the Kentucky Trout Stamp contest in 2000, the Western Heritage Art Show's Artists' and People's Choice awards in 1999, and the Delaware Trout Stamp contest in 1999.

Rossberg's painting was selected from among six entries. Jim Borgreen, an art teacher from Lewistown, and the winner of the 1996 competition, placed second. Alice Martin of Kalispell placed third.

The $5 Montana Migratory Bird Stamp helps to fund waterfowl habitat improvement projects. Since the first stamp was sold in 1986, about $2 million has been dedicated to revitalize Montana wetlands. Additional funds are generated via the sale of limited edition prints that range in price from about $140 for a signed print and stamp to about $560 for an "executive edition" numbered, signed, and remarqued print with a stamp and gold-plated medallion embossed with the winning painting. Prints of the 2001 Migratory Bird Stamp can be ordered through select art galleries in Montana. ■

Turkey Trot

story and illustrations by CHERYL FRASER

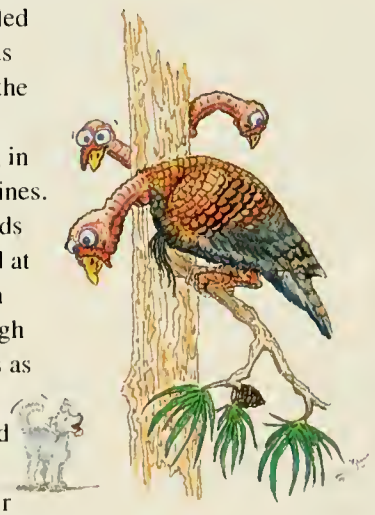
Sweat trickled down my ribs and face as I ran down the logging road with a fifteen-pound dog stuffed under each arm. The green camo fatigues I had on over my clothes were a couple of sizes too big, and jogging made it hard to keep my pants up. I thought I was in pretty good shape, but I had never tested myself under these conditions—probably because it hadn't occurred to me to run a quarter-mile in 75 degree weather, carrying two dogs with my pants hanging somewhere in the vicinity of my knees.

My friend Darlene and I were fully involved in turkey hunting that May day. Darlene is a transplant from Minnesota, and I grew up in western Montana. She and I share a love of the outdoors and do a lot of camping, hiking, and fishing together. This, however, was our first turkey hunt, and if it wasn't going as planned, at least it was going as usual.

It all started innocently enough the previous winter. We were cross-country skiing in the mountains above Deer Lodge when we happened on some rather large bird tracks and scat.

"Cheryl, what kind of tracks are these?" Darlene asked, as I am considered the track expert and poop professor of our twosome. Fortunately, before I could express my ignorance and blow my image, our dogs Buddy and T-Bone streaked by, their noses tight to the ground. After making a short sweep of the area, they made a beeline for the heavy cover beside the road.

In a thunder of wings, eight turkeys jumped in the air and sailed 30 yards out on the ridge, landing in some pines. The birds gawked at us from their high perches as we watched them with our field glasses.



"Let's see how close we can get," Dar said excitedly, climbing down the bank. The turkeys had seen enough and one by one they flushed and flew out of sight. The dogs and Dar stood looking up, happy grins on their faces. "Wow, wouldn't bagging one of those be great for Thanksgiving?"

It was at that moment Darlene decided to become a turkey hunter, because Dar is willing to try anything. And, of course, I was included because I'm easily talked into any adventure.

When we arrived home from skiing, we immediately checked the turkey regulations. Five turkey permits were allotted to the area, and we were naive enough to be excited over that fact.

The following March, I was amazed when Dar telephoned me. "Hey, Cheryl, guess what, I got a permit! We're going hunting!" she announced. In the years since, I've become less and less surprised at Darlene's luck in drawing permits—for elk, deer, or turkeys—none of which I ever get.

"Do you have any idea how to tell a tom from a hen?" I asked at our first turkey hunting meeting, having never run into this problem hunting grouse.

Dar checked her permit for information: good for one tom turkey. "I don't have a clue," she said, making another entry to our already expansive list. "I wonder how you go about hunting them," she said, tapping her pen against her teeth.

"Well, the dogs treed them pretty easily last winter," I said, recalling the wild flush of the birds on our approach. "I think I could have hit one."

"I think we'd better get a video," Dar replied, ending the meeting. Early

on, we found that having meetings was a good thing, for while we almost never accomplished anything, it was a good excuse to get together for beer and pizza.

So for our next meeting, we rented videos. Hen/tom identification turned out to be straightforward enough, but I was a little uneasy when I realized we had to call them by imitating a hen.

Darlene, undaunted by this information, promptly went out, bought a call, put it into her mouth and began making strange noises. She seemed, if not to have a talent for it, at least a determination, and after a week she advanced to the point where she could practice in the house.

Another thing we learned from the video was that we needed to accessorize. The gun was no problem. Dar could use my 12 gauge, which seemed to be the turkey hunter's weapon of choice, but we were lacking anything in camouflage. This dilemma was solved by a donation of fatigues from a retired military friend who also provided us with camo face makeup. "We look like two-thirds of a three-stooges commando outfit," I commented to Dar at our first dress rehearsal.

"Look at it this way," she replied, "No one will recognize us anyway."

Finally we were ready, and had planned on three or four different weekends to try our newfound abilities, but just kept finding reasons to put off the moment of truth. We made plans to go early Sunday morning, the last day of the season.

Video commandment No. 1: You must scout and locate the birds the day before the hunt, as they would surely roost in the same area and be there the next morning.

Well, we decided we needn't waste our time doing that. We already knew where the birds were; after all, we saw them last winter.

Video commandment No. 2: You must get there before daybreak when they are still on the roost, find their location by provoking them into gobbling by hooting, barking, or slamming a car door, and then set up above them as they dislike walking downhill. Put no obstacles in the way of your tom turkey.

We got to our spot about 9:30 that morning. We barked and hooted and about slammed the doors off Dar's truck, but no turkeys responded to our challenge.

"I suppose it's a little late for the turkeys, but it sure is a nice day," said Dar, always the optimist. The sun was shining and the wildflowers were in bloom.

"Let's take the dogs and go for a walk," I said.

"All right, but we should put on our camo stuff just in case," cautioned Dar, already shrugging into her coat.

I pulled on my hat and quickly hunched into the rest of my camo's. I forgot my belt, but an occasional hitch-up on the pants worked. Neither of us bothered putting on the camo grease paint, figuring it was too messy.

We started up a big open park flanked on either side by draws, which eventually dropped into creek bottoms. "Where are you headed?" I asked Dar as she started to drop off into the woods.

"Well, I figure any turkeys will be in the trees," she responded. "Why?"

"I think we should stay up here," I replied, tempted by the easy walking, sun, and flowers in the meadow.

We settled it by doing what we usually do in that case. Dar and her dog dropped off the side of the ridge and started up through the trees. My dog and I strolled up the hillside.

With the realization that we often enjoyed separate paths when we were in the woods, we had devised a way of keeping in contact with each other by whistling a chickadee call back and forth. And now, after a few bird calls, it was apparent that I was making better time than she was, as I was having to call louder and louder each time to get an answer. My chickadee

would have to have been about the size of an average hog to match the volume of noise I was making.

I was within a short distance of the top when I heard the tom gobble. Judging from the sound, he was in a small finger of trees about 150 yards above me. My pulse rate hit 200. Adrenaline is a wonderful thing. I turned and ran back down the way I had come, calling my dog as I went.

After several frantic minutes of chickadee-ing, I located Darlene. "Dar, I heard a tom! He's just up the ridge from here, maybe 300 yards!" I panted, trying to catch my breath. "Try talking to him!" She tried a few hen clucks, and I'll be darned if the tom didn't answer. It was plain that he was looking for a girlfriend.

"He's coming down." Dar said, her eyes getting wide, a huge grin on her face.

"So much for the video experts," I noted. She gave a few more clucks and a putt for emphasis, to which the tom immediately replied. A look of panic crossed our faces. The dogs!

T-Bone, my little female fox terrier/schnauzer cross, was an experienced rabbit and grouse dog. And Buddy, Dar's small white terrier mix, had been treeing and retrieving birds since he was three months old.

"You've got to take them back to the truck!" Dar whispered anxiously.

The dogs could hear the turkey coming, had picked up on our excitement, and no way were they going to leave willingly. "C'mere T-Bone," I whispered, trickery dripping from my voice. "C'mon Buds." Buddy, sensing a set-up, stayed just out of reach. Out of time. We each made a flying tackle, capturing a dog. Then, jamming one under each arm, I hightailed it for the truck.

After depositing the dogs and getting my pants back in order, I crept back up the hill, crawling from tree to tree, listening to the interaction between the tom and Darlene. He was getting really close, so I ducked behind one particularly large stump, with only my eyes and hat visible.

Suddenly a shotgun blast ripped the quiet, and then another. WHAT? Did she miss?

I've since come to learn that Dar shoots everything twice; it's a humanitarian thing.

I was still peering hopefully from behind my stump when an ungodly whooping began just ahead of me. Not concerned now with any disturbance I might make, I raced towards the fracas. There was my friend war-whooping and dancing around a beautiful tom turkey (nine-inch beard, guys). I joined her, as it seemed the appropriate thing to do. "Give me five!" she hollered. A quick shadow of concern flitted across her face "Oh, we'd better be quiet, we don't want anyone to know about this spot," she said seriously.

Right.

We shot a roll of film as evidence of the deed, loaded our prize into the truck and headed back toward Deer Lodge, eating peanut butter and jelly sandwiches and toasting the event over steaming cups of coffee.

Just over halfway down the mountain, the road travels through a particularly wet and brushy drainage filled with beaver dams and silted-in creek beds. You know the place—fishing hell. It was on one of the creek channels that we spooked the moose. The animal lunged out of the willows, paused for a moment at the side of the road, then strode grandly across. Slamming on the brakes, Dar sat and watched the huge creature, a look of rapture on her face.

I looked at her in dismay, knowing what was coming.

"Do you suppose they issue moose permits here?" she asked in a whisper. ■

Frog with a Tail

story and photos by JOHN FRALEY

I am a lover of northwestern Montana's cold mountain streams. And having spent a lot of time in these creeks I have developed a relationship with a most unique inhabitant. I'm not talking about a fish or a bug; I'm referring to a water animal that few people ever see, a secretive, half-dollar-sized frog and its sucker-mouthed tadpole.

You can search the world but you won't find a more unusual amphibian than Montana's tailed frog. Shy and water-dependent, this primitive frog never strays far from a stream. Only two inches long, the tailed frog is olive-brown, with webless fingers and slightly webbed toes. It is one strange frog: It has vertical pupils, no external eardrum, no voice, and short ribs attached to some of its vertebrae. To add to its unfrog-like nature, it can't stick out its tongue.

Mary Dickerson, in *The Frog Book*, published in 1906, called the tailed frog a "curious little batrachian" whose skeleton more closely resembles a salamander than a frog.

Tailed frogs are restricted to small, frigid streams in the northwestern United States and southwestern Canada. They grow slowly in these icy waters, which are fed by snow fields long into the summer. The tadpoles take several years to develop, and the frog requires 6 or 7 years to reach maturity. A distant relative lives in New Zealand, but there are no similar frogs anywhere else.

Male tailed frogs have a one-of-a-kind tail-like extension. It's not a true tail, but is controlled by two special muscles that show the relationship to even more primitive tailed ancestors. The "tail" is used for breeding and is essential for fertilization of the female's eggs in its swift-water habitat. Adding to its uniqueness, the tailed frog is the only frog in the world where fertilization is internal.

After breeding during the brief mountain summer, female tailed frogs (which lack tails) attach their eggs in rosary-like strings to the undersides of rocks in the stream. These eggs puff up to about a third of an inch in diameter after they absorb water—Boone and Crockett dimensions in the frog world.

The tadpole of the tailed frog is well suited for life in flowing water. The sucker-like mouth enables it to cling to rocks and feed on algae or tiny aquatic insects. I've watched these black tadpoles slowly inch along upstream through cascading water over a near-vertical rock face, stripping algae from the rock's surface. Their mouths contain about a dozen rows of tiny, black teeth. Some teeth are modified for grinding food, some for scraping, and others for attaching to rocks. The tadpoles don't have external gills, but take in dissolved oxygen through their porous skin.

The discovery of the tailed frog in 1897 (referred to then as the American ribbed toad), and Dr. Helen Gaige's detailed description of the tadpole in 1920, were hailed at the time as two of the outstanding events in the study of North American frogs. In her account, Dr. Gaige found the unusual tadpoles to be common in a swift stream in Idaho. "The boys in the camps at first enjoyed swimming in one or another of the beaver ponds," she wrote, "but they soon began to complain of the 'leeches' that attached themselves to their legs and toes. I found these were the same larvae."

I'm surprised that the boys in Dr. Gaige's quaint account were upset by the tailed frog tadpoles. It has been my experience that kids almost universally love to catch and

The adult tailed frog is about two inches in length, has no voice, and can't stick out its tongue. Tadpoles (far left) are equipped with sucker-like mouths for clinging to rocks in flowing water.

study frogs, especially those with cool features like a tail, or a tadpole with a suction-cup mouth. The tailed frog is a Montana "species of special concern," so any handling or study should be done with care. But it does seem to be a species that catches the imagination of youngsters if they are lucky enough to see them.

According to Dennis Flath, FWP's nongame coordinator, tailed frogs seem to be secure and even common in suitable streams in western Montana. "At this point we judge them to be stable," says Flath. "We may have had losses in some areas, but with continued good forest practices and stream protection we can mitigate that." Flath adds that the key to protecting tailed frog habitat is to maintain cold water temperatures and silt-free stream bottoms.

Because of its strict habitat needs, the tailed frog is a natural indicator of stream health—a classic "canary in a coal mine." If a stream warms or becomes too silty due to poor logging or road building practices, tailed frogs and their tadpoles will simply disappear.

Although the reclusive tailed frog is not exactly the most prominent watchable wildlife species in Montana, it's certainly worth a look. In fact, you may find, as my son and I have, that the enigmatic little creature captures your attention and your imagination. ■

A Kid's-Eye View

by Kevin Fraley

My dad and I have had lots of experiences together with tailed frogs. Every year since I was four years old we have gone fishing at Jenny Lake, which is four miles up a steep trail. We always stop at a small stream crossing the trail. There we study the tadpole of the tailed frog, which has a queer sucker mouth. I always want to stay longer to look for the small but fascinating tadpole. Once I caught an adult male tailed frog there that my dad filmed for an outdoor report.

My fondest memory of the tailed frog was when my dad and I hiked up to Almeda Lake in the Great Bear Wilderness. We didn't catch a single fish, but we found some high-elevation tailed frogs. As we followed a small stream, my search for aquatic insects made me turn up a lot of rocks. Suddenly I saw an adult male tailed frog! My dad was impressed. We kept looking and found many tadpoles. Finally my dad found a female tailed frog! Another tailed frog location is a tiny stream up the South Creek Trail. We saw a lot of small tadpoles, and found some two inches long.

The tadpoles are not as easy to catch as you might think. The tadpole darts around at high speed, moving its tail rapidly back and forth just like a fish. Sometimes, the tadpoles will stick to your hand like a vacuum cleaner pressing against a carpet. I've always loved amphibians, and this is one of my favorites. I like this cool animal because it's the only male frog in the world to have a tail as an adult, and a sucker-mouth tadpole. Studying tailed frogs with my dad has really helped me appreciate the environment and increased my love for nature.

Kevin Fraley with tailed frog tadpoles.

Profile of an Elk Hunter

by Zoe King and Rob Brooks

For many elk hunters, the end of one hunting season is simply the beginning of the next. There are stories of past hunts, tracks seen, bugles made, and shots missed. Hunters enjoy the good-natured joshing over who drew the short straw and had to keep the fire stoked, the religious cleaning of their guns, loading of shells, and the endless list of purchases to be made. Hunting is a sanctuary from the everyday grind of work, meetings, customers, and phones—it is the last bastion of "getting away from it all."

But exactly what is it that elk hunters hope to gain from a day or a week in the woods? Meat? Antlers? Camaraderie? In 1986, Montana Fish, Wildlife & Parks (FWP) conducted an "Elk Hunter Preference Survey" in conjunction with an exhaustive study of the economic value of elk hunting in Montana. The objectives of the survey were to describe elk hunters in terms of age, income, and other demographic factors, to learn in detail why they hunt elk, and to identify the different

DONALD M. JONES

Appreciation of nature draws thousands of American hunters into the backwoods where a rustic setting leads to feelings of a new life...

"types" of elk hunters who may hunt for different reasons but who obtain similar benefits. The survey produced a profile of the average Montana elk hunter and shed light on how resident and nonresident hunters view the opportunities and experiences available (see "Best of the Big Medicine," *Montana Outdoors*, Sept./Oct. 1988).

To find out if elk hunter characteristics and motivations have changed over the past decade, in 1998 we conducted a second elk hunter preference survey. We found that the overwhelming majority of hunters (96%) still go hunting because they want to be outdoors, enjoy the solitude, the pleasant scenery, and the natural setting. But if we were to paint a portrait of today's resident elk hunter, we would see that the average hunter (if there is such a creature) has aged a few years. He is now a 42-year-old male, with 18 years of hunting experience under his belt; he hunts 11 days a year and earns $35,000 to $39,999. In 1986, the average resident hunter was 37 years old with 15 years of elk hunting experience.

The nonresident elk hunter, on the other hand, is slightly older than our resident hunter. He is 47 years old with 12 years of hunting experience, hunts seven days a year, and earns substantially more than the average resident hunter ($50,000-$74,999 a year). He, too, has aged since 1986, when he was 43 years old with 8 years of hunting experience.

The new survey showed hunters' behaviors and management preferences are still varied, based in part on the type of experience they are seeking. Fewer hunters chose to "rough it" in 1998 than in 1986. More nonresident hunters (37%) than resident hunters (17%) camped, and 15% of the resident and 26% of the nonresident hunters used horses. Seventeen percent of residents and 21% of nonresidents preferred the comfort of a trailer or motorhome.

Many hunters chose to drive to an area and then walk into the backcountry. The number of roads available for vehicle use was rated as about right by 78% of the hunters. Half (51%) of those surveyed felt that only open roads should be used to retrieve game with a vehicle; however, opinion on the use of roads for game retrieval was divided in 1998, just as it was 12 years ago.

When we asked hunters about their most recent trip, we found they hunted the same area an average of two years—significantly lower than in the earlier survey when they said they hunted the same area for five years. They walked an average of six miles and mainly hunted with a rifle in 1998, although the percentage using a bow increased from 1% to 15% between surveys.

One-fifth of the hunters surveyed were successful in filling their elk tag in 1998—about the same as in 1986. Sixty-five percent of successful nonresidents and 41% of residents bagged bulls. In the earlier survey, about four-fifths of the elk taken were antlered.

About a fifth of all hunters harvested big game other than elk in 1998, mostly mule deer (66%) and white tailed deer (33%).

Two-thirds of hunters were alone or with only one other person in their vehicle. While one-fifth of the hunters surveyed said they didn't see any other hunters, those that did said the other hunters they saw affected their own enjoyment of the trip. Resident hunters were much more likely than nonresident hunters to say there were too many hunters in their hunting area.

Although only 6% of the survey respondents were women, the number of women participating in hunting is increasing. Thanks to programs like *"Becoming an Outdoors Woman,"* aimed at creating more awareness and comfort in the outdoors, women are improving their knowledge and skills in gun handling, archery, and orienteering.

As in 1986, nonresident hunters were about twice as likely to belong to a conservation club (66% for nonresidents versus 31% for residents).

It is difficult to put the feelings and values of hunters into dollars and cents, but the economic value of elk hunting to the Montana economy is impressive. From Jordan to Libby, hunters' dollars provide significant financial impact in terms of sales for food, lodging, transportation, and guide fees to local businesses. The survey showed the average resident hunter traveled 104 miles and spent $142 per hunting trip. The average nonresident hunter traveled 1,224 miles and spent $1,659 per hunting trip.

Interestingly, 61% of hunters stated their hunting trip was worth more than they actually spent, and they were willing to pay even more to improve their hunting experience, (i.e., improve their chance of getting a six-point or

better bull or to see fewer hunters). Resident elk hunters reported they were willing to pay an additional $311 over and above what they actually spent on their most recent trip. Nonresidents' willingness to pay was significantly higher, $931 more per trip. Nonresident hunters typically spend significantly more per trip than resident hunters, and as would be expected, the amount spent has increased over the last 12 years.

What brings a hunter back year after year? Maybe it's the sweat freezing on his clothes, giving his coat that frosted look, especially on the shoulders and below the chin where his breath has condensed, after a day of tracking in the tranquility of the forest. Maybe it's the dismay of stepping on some deadfall, sending a noisy pop of snapping brush and twigs throughout the timber, even with the snow muffling the noise, bringing elk bolting out of their beds. Maybe it's the "gourmet" meals of canned chili prepared over a roaring fire fueled by dried tamarack, blended with the smell of damp leaves and dirt, the sound of a babbling brook running outside the tent, and the horses snorting for their ration of hay and oats.

Love of the outdoors coupled with the challenge, suspense, and the adrenaline-charged high of the hunt itself most strongly attracts hunters to their sport. For many, hunting is still a symbol of self-reliance. According to the U.S. Fish and Wildlife Service, wildlife-associated recreation is important to millions of Americans; nearly two out of every five people participated in hunting, fishing, and wildlife watching in 1996. Success isn't measured by the amount or size of the game bagged; the seeing, stalking, and outwitting of the elk on its turf is most important. ■

Left: Elk hunters contribute to Montana's economy through purchases of hunting gear, food, lodging, and transportation. Below: The percentage of elk hunters using archery equipment increased significantly between 1986 and 1988.

Jeff Hagener Takes the Helm at FWP

Jeff Hagener, a 20-year veteran of the Montana Department of Natural Resources and Conservation, took the helm as director of Montana Fish, Wildlife & Parks in January after his appointment by Governor Judy Martz. Hagener, 46, replaces Pat Graham, who served eight years as FWP director under Governor Marc Racicot.

"I'm honored Governor Martz has asked me to serve the people of Montana as the director of this critical natural resource agency at this critical time in our history," Hagener said. "FWP is responsible for managing fish, wildlife, and cultural resources that are world-renowned and vitally important to nearly everyone who calls Montana home."

Hagener said hunting and fishing access, sportsman and landowner relations, threatened and endangered species conservation and management, parks funding, and game damage will be among the top issues confronting the agency.

"These issues have an enormous impact on recreation in Montana and on the quality of our lives," Hagener said. "FWP has an admirable track record of being open and proactive and it's my intention to build on and improve that record as we tackle problems that face Montana's sportsmen and women, landowners, and our visitors."

Hagener was born and raised in Havre, is a graduate of Havre High School, and received degrees in wildlife biology from the University of Montana and in agriculture from Montana State University.

After brief stints as a packer and guide in the Bob Marshall Wilderness and along the Rocky Mountain Front in the late 1970s, Hagener carried out range and wildlife inventories for the federal Bureau of Land Management.

JON EBELT/INDEPENDENT RECORD

Jeff Hagener

"I have been a hunter and angler since I was old enough to accompany my dad and brothers to the field," Hagener said. "It was these outdoor experiences that shaped my goals to become a natural resource manager, particularly in wildlife management."

He began his career in Montana state government in 1981 as a range/reclamation specialist with the former Montana Department of State Lands. In 1986 he became chief of the Surface Management Bureau and in 1989 he was named administrator of the Lands Division, which evolved into the Trust Land Management Division when DNRC and State Lands consolidated in 1995.

Over the course of his career Hagener has served on several statewide committees, including the Natural Resources Damage Technical Task Force, the Governor's Private Land/Public Wildlife Advisory Council, and the Total Maximum Daily Load Advisory Group. He has been an active participant in the Western States Land Commissioners Association and for the past five years has served on the association's executive committee and, most recently, as its president.

Hagener and his wife, Debbie, live in Helena with their two teen-aged children.

Outgoing Governor Racicot Praises Pat Graham

Editor's note:

In December, Patrick J. Graham completed an eight-year term as director of Montana Fish, Wildlife & Parks, capping a 25-year career with the agency. After receiving degrees in fish and wildlife management from Montana State University and the University of Idaho, Graham joined FWP as a biologist. He subsequently worked as a fish and wildlife program manager, chief of fisheries management, administrator of the Fisheries Division, deputy director, and finally, director. When we asked Governor Racicot last December to comment on Pat's term as director, he sent this letter.

December 31, 2000

Dear Pat:

It has been a great pleasure to work so closely with you over the past eight years. Your tenure as director of Montana Fish, Wildlife & Parks has been marked by your steady hand in managing one of our highest profile agencies and will be remembered for the leadership you provided as the agency assembled an impressive list of conservation accomplishments.

The dedication and creative imagination that helped you move rapidly up FWP's career ladder revitalized the agency. Your technical background and savvy intelligence contributed significantly to the effective management, long-term protection, and enhancement of Montana's renowned fish and wildlife resources and outdoor recreational opportunities.

You have been effective at finding common ground in the State Legislature and as a result FWP programs have remained solid, as has the budget necessary to support them on the state government level. You have improved relations between FWP and other agencies, which was much needed and greatly appreciated.

With your leadership roles in the Western Association of Fish and Wildlife Agencies and the International Association of Fish and Wildlife Agencies, you have helped Montana remain one of the West's most progressive fish and wildlife conservation agencies.

During your 25 years, you have helped all of us recognize the importance of sharing the limited resources we all cherish, and you have heightened our awareness of the importance of working together to maintain the Montana lifestyle.

You have been a dedicated and tireless worker, continually promoting and working to make FWP a better and more open agency. You have spent hundreds of hours on the road and in the field sacrificing time that you might have otherwise spent with your family or pursuing other personal interests.

It has been an honor to serve the people of Montana with you over these past eight years. Thank you for your hard work, dedication, and friendship—and continued good luck and success in all of your pursuits.

Sincerely,

Marc Racicot
Governor

Three FWP Commissioners Leave Lasting Legacy

On completion of their terms in February, three commissioners—Charles Decker, Dave Simpson, and Stan Meyer—retired from the five-member Fish, Wildlife & Parks Commission after eight years of service, leaving behind a legacy that will influence Montana's landscape forever.

Charles Decker of Libby, owner/operator of CRD Timber & Logging Co., avid hunter and angler, and one of the original founders of the Rocky Mountain Elk Foundation, brought to the commission a working man's view of resource management. Committed to listening to his constituents' concerns, Decker lists getting the best possible scientific data and not being maneuvered into hasty decisions by people representing special interests as important attributes for any commissioner.

Dave Simpson, from Colstrip, president of Westmoreland Resources, dedicated hunter of upland birds, waterfowl, and big game, vice-chair of the commission from April 1995 to February 2000, and current member of the Governor's Private Land/Public Wildlife Council, tempered the mood of commission meetings with an air of intellectuality. Often referred to as the "brains" of the commission by fellow members, Simpson cites approval of many land acquisitions and easements and implementation of a statewide deer management plan as among the most significant accomplishments achieved during his term.

Stan Meyer, a retired Great Falls advertising executive, avid angler and upland bird hunter, and chairman of the commission from February 1993 to February 2000, lent wit and philosophy to many a commission meeting. Champion of the "blue collar Montana sportsman," Meyer points with pride to a commission decision made early during his tenure to improve relationships between Montana landowners and sportsmen. "I believe we have done that," says Meyer. "My greatest satisfaction as a commissioner has been gaining an understanding of the tremendous commitment Montanans have to the management of their wildlife resources. Montanans are very knowledgeable and committed, and as commissioners, I believe we have responded by having an open and democratic commission process that invites and incorporates public input. As commissioners, no decision was made in advance. We voted our conscience, incorporating what we learned from constituents and FWP staff, and making what we felt were the right decisions."

These three men, along with fellow commissioners Darlyne Dascher, Dale Tash, and Tim Mulligan (appointed in 1998 following the death of Commissioner Tash), forged a legacy of accomplishments that will remain long after their terms are finished. Perhaps most notable and enduring is the land ethic they established for Montana. In the words of former FWP Director Patrick Graham, "In 1993, intense public opposition and skepticism was aimed at FWP's land acquisition and conservation easement projects. By working closely with Montana landowners, this FWP Commission diminished land conservation controversies and began to successfully strike public agreements to conserve wild and cultivated lands important to wildlife. This commission did not just look at the land. The members...looked into the heart and heritage of Montana, and the very idea of land conservation in Montana changed for good."

To put things in perspective, this FWP Commission approved acquisitions totaling approximately 39,000 acres and conservation easements on 328,000 acres—well over half of the roughly 500,000 acres acquired or protected by FWP to benefit wildlife in the past 50 years! Wherever in Montana a person travels, he or she is likely to pass near a conservation easement, wildlife management area, or fishing access site that will forever protect wildlife habitat, preserve open space, and provide public access.

Charles R. Decker

David W. Simpson

Stan Meyer

Large predators posed challenges during the commission's tenure, as mountain lion populations expanded throughout Montana and controversy erupted regarding spring black bear hunting. In the shadow of citizen referendums in other states threatening mountain lion and spring bear hunting, the commission authorized environmental impact statements to guide future management of these animals. Based on facts and public input gathered in the EIS process, the commission continued the tradition of spring black bear hunting and responsible mountain lion harvest in Montana.

Competition for access to Montana's wildlife resources has increased dramatically in recent years, presenting one of the commission's most daunting and time-consuming challenges. Changing land ownership, commercial hunting and fishing enterprises, and increased interest in Montana's hunting and fishing resources have all combined to exert pressure on available access.

To help balance these competing interests, in 1996 the commission approved the sale of variable-priced licenses to a limited number of nonresident hunters sponsored by outfitters, with a significant portion of the revenue directed toward improving public hunting access. Under this system, the enhanced Block Management Program expanded to its current level of more than 1,000 landowners enrolling nearly 8 million acres, providing nearly 150,000 hunters with 300,000 days of hunting during the 2000 hunting season.

Nearly every issue faced by FWP commissioners has roots in controversy. Wildlife management is not an exact science, but rather, as described by Aldo Leopold, an art. And the charge of commissioners is to "sort it all out" and make the best possible decisions to protect and conserve Montana's fish, wildlife, and parks resources. It is impossible to capture in one short article all of the accomplishments achieved by this commission through the efforts of Dave Simpson, Charles Decker, and Stan Meyer, along with fellow commissioners. Their legacy, like the wild places they have helped preserve, will survive for future generations, helping keep Montana truly "The Last, Best Place."—*Alan Charles, Landowner/Sportsman Coordinator, Helena*

Cutthroat Trout Display Presented to State of Montana

Montana's state fish, the cutthroat trout, was first described by Meriwether Lewis in 1805 near the Great Falls of the Missouri River. This fish, named for the orange slash under its jaw, has two subspecies in Montana. "They were eventually given scientific names in honor of the leaders of the expedition," says Jim Vashro, FWP fisheries manager for Region 1: "*Oncorhynchus clarki lewisi* for the westslope, and *Oncorhynchus clarki bonvieri* for the Yellowstone."

Cutthroat trout are indicators of good aquatic habitat and cold, clean water, says Vashro. While they have declined in abundance and distribution in recent decades, both subspecies have become the focus of renewed conservation efforts.

"Several years ago," says Vashro, "we realized there was no cutthroat trout display in the Capitol Complex. In December of 2000, FWP was able to present such a display to the State of Montana. Renowned fish taxidermist Mike Trevor of Helena donated the fish mounts. We felt it especially fitting that FWP Director Pat Graham present it to Governor Racicot, since both men have done much on behalf of cutthroat trout conservation in Montana."

The display is currently housed at the Lewis and Clark Interpretive Center in Great Falls, where it will be seen by thousands of visitors this summer. A committee has been formed to decide where to place the display permanently at the Capitol Complex.

In a ceremony last December, FWP presented the state with a cutthroat trout display for use in the Capitol Complex. Pictured from left to right are Helena taxidermist Mike Trevor, Governor Marc Racicot, FWP Director Patrick Graham, and FWP Region 1 Fisheries Manager Jim Vashro.

DNA Testing May Solve Old Wildlife Mystery

by Tom Lemke
Wildlife Biologist
Wildlife Division, Region 3

In recent years DNA analysis has been used to free death row prisoners, determine the relationship of a slave to a U.S. president, and compare modern-day bison to their extinct relatives that lived 11,000 years ago. Modern DNA technology that extracts viable samples from bones and antlers may now help to answer a 100-year-old question about an extinct elk subspecies and shed light on controversial wildlife issues in Arizona. This complicated story has a Montana connection.

The story begins in the late 1800s when the Merriam's elk, a large-antlered subspecies native to Texas, Arizona, and New Mexico, was becoming increasingly rare. By the early 1900s, Arizona was the last stronghold for the subspecies. Even there, unregulated, year-round hunting by settlers and the U.S. Army and overgrazing by cattle had reduced elk populations to small remnant herds in remote pockets of mountainous habitat. Perhaps the last physical evidence of Merriam's elk in Arizona was the discovery in 1904 of recently shed antlers. Shortly after, the Merriam's elk was presumed by many to be extinct. Rumors persisted that perhaps a few native elk hung on for many years, although no concerted scientific effort was made to search for them.

In 1913, Rocky Mountain elk from Yellowstone National Park were released into the same mountain ranges formerly occupied by Merriam's elk in Arizona. Within a few years, 200 to 300 elk captured near Gardiner, Montana, were released throughout the state. Arizona currently boasts a population of more than 50,000 elk, presumably descendants of these early Yellowstone transplants. Or are they? That question has been raised many times in recent decades. Did a few Merriam's elk survive to breed with Rocky Mountain elk? Is there a genetic component of Merriam's elk surviving in Arizona? And if so, so what?

The "so what" question has taken on significant new meaning based on public interest in this biological mystery. Merriam's elk allegedly possessed the largest and straightest antlers of any of the six North American elk subspecies. Some sportsmen, outfitters, and outdoor writers are using the Merriam's elk "gene theory" to explain why so many large Arizona elk have recently made it into the record books, particularly from certain Arizona Indian Reservations where the last Merriam's elk occurred. In this case the possibility of remnant genes adds to the allure and commercial value of highly coveted and very

JOHN R. FORD

Testing has shown Arizona's elk to be direct descendants of elk captured near Gardiner, Montana, and transplanted to Arizona in the early 1900s.

limited trophy elk hunting opportunities.

If Merriam's elk DNA still exists in some elk populations, environmental and antihunting groups might like to protect those gene pools. If, on the other hand, all elk in Arizona are the pure Rocky Mountain subspecies, the Arizona cattle industry may be interested in reclassifying elk as "exotic animals." A few years ago, there were discussions among cattlemen that the Arizona Legislature should reclassify Arizona's elk as exotic and request their removal from private grazing land and leased public grazing allotments.

A lot of folks, including the Arizona Game and Fish Department, have wanted to put this issue to rest, but until recently there was no way of doing so. Thanks to funding from the Rocky Mountain Elk Foundation, Arizona Game and Fish Department biologist Jim Heffelfinger initiated a study to detect evidence of Merriam's elk in Arizona's extant elk herds through DNA analysis.

The study plan called for collecting DNA samples from elk throughout Arizona, particularly from areas that last supported Merriam's elk (e.g., the White Mountains), and comparing them with DNA samples from elk taken during the Gardiner late-season elk hunt in Montana. In January and February of 2000, FWP biologists collected 46 DNA samples from Yellowstone elk and sent them to Arizona for testing. Finally, owing to a breakthrough technique, scientists will collect DNA samples from bone and antlers of three Merriam's elk collected more than 100 years ago. Prior to this technique, soft tissue, such as skin or hair (which are unavailable), was needed for DNA analysis.

It is hoped this study will reveal if Merriam's elk contributed to the gene pool of present-day Arizona elk; how genetic diversity in Arizona elk compares with that of Yellowstone elk (when only a small number of females "founded" the Arizona population); and whether the Merriam's elk was indeed a valid subspecies.

The Merriam's elk in Arizona is an example of just how contentious and difficult wildlife management has become. New technology may help answer important biological questions, but polarized social and economic interests make it difficult to act on that knowledge. Managing wildlife today may have less to do with biology and natural processes and more to do with human values and expectations than ever before. If wildlife biologists and managers dealt only with the needs of animals, perhaps their hair wouldn't be nearly as gray.

Editor's note.—As we were going to press, Jim Heffelfinger reported that preliminary results show no genetic distinction between the Arizona elk and the Yellowstone elk sampled in the study. Says Heffelfinger, "No data suggest that elk from Arizona came from anyplace other than Yellowstone." Genetic analysis of three museum specimens is ongoing, and has the potential to establish the validity of the Merriam's elk as a distinct subspecies. We'll keep you posted on the results.

Bookshelf

THE GAME AND FISH MASTERY LIBRARY: TROUT, by S.G.B. Tennant, Jr., photography by Arie deZanger, Willow Creek Press, P.O. Box 147, Minocqua, WI 54548 (800-850-WILD); 2000, 96 pages, hard cover, $19.50 plus $4.00 shipping.

This latest cookbook from The Game & Fish Mastery Library features 24 trout recipes, ranging from a quick and easy way to grill brook trout to more elaborate dishes like "Water Angels of Soo-Chow" and "Irish Poached Trout in Sorrel Court Bouillon." But the relatively small number of recipes shouldn't be taken as lack of effort or inspiration—as author S.G.B. Tennant, Jr., says in the introduction, "I had to choose from the thousands of trout recipes that I have tried at streamside or in the kitchen, and tried to narrow the list to the exceptional, and the absolutely necessary, while still having a little fun." Arie deZanger's 35 superb color photographs make this book a delight to the eye as well as a valuable guide to preparing your catch.

LABS AFIELD: HUNTING WITH AMERICA'S FAVORITE RETRIEVER, photography by Denver Bryan, text by E. Donnall Thomas Jr., Ducks Unlimited and Willow Creek Press (to order, call 800-45-DUCKS), One Waterfowl Way, Memphis TN 38120; 2000, 160 pages, 190 color photographs, $29.50, hard cover.

Two talented Montanans—Bozeman photographer Denver Bryan and Lewistown writer E. Donnall Thomas Jr.—have collaborated to produce a heartfelt tribute to America's most popular dog. Labs are universally admired, by hunters and nonhunters alike, for their energy, friendliness, and irrepressible personalities. In this book, they are captured, in words and photos, doing what they love best: hunting and retrieving waterfowl and upland birds. Don Young, Executive Vice President of Ducks Unlimited, sums it up nicely in the preface: "Many of you are hunters and will recognize these [photos] as the defining moments in the lives of our favorite retriever. Those of you who don't hunt will nonetheless

Bookshelf

discover how and why Labs developed all the traits that make them the best-loved dogs of our time: loyalty, intelligence, courage, diligence, a gentle disposition, a desire to please, and an absolute compulsion to retrieve things."

CLASSIC FISHING LURES AND TACKLE, text by Eric L. Sorenson, photography by Howard Lambert, Voyageur Press, 123 N. Second St., Stillwater, MN 55082 (800-888-9653); 2000, 144 pages, 60 color photographs, $29.95, hard cover.

Many anglers have fond memories of growing up fishing with grandpa, and some are lucky enough later in life to inherit the vintage tackle that grandpa used. Trouble is, most of us don't have a clue as to the history or collectability of these items. This book provides valuable background on the origins and evolution of fishing gear, the inventors of major items, and the companies that produced them. Included are classic manufacturers like Heddon, Pflueger, Shakespeare, South Bend, and Orvis. Complementing Eric Sorenson's text are Howard Lambert's artistic color photographs of rods, reels, lures, spearfishing decoys, creels and other accessories, catalogs, and even vintage outboard motors. If you're a "seasoned" angler, this book will take you down memory lane and soon have you rustling around in your basement or attic. If you're a younger angler, it may start you on a lifelong voyage down the fascinating river of angling history.

WESTERN BIRD HUNTING, edited by Worth Mathewson, Safari Press, 15621 Chemical Lane, Bldg. B, Huntington Beach, CA 92649 (800-451-4788); 2000 (Second Edition), 289 pages, $29.95, hard cover.

The stories in this anthology, penned by hunters like H.L. Betten, Frank Dufresne, and Charles F. Waterman, describe western bird hunting from the late 1800s to contemporary times. Much has changed over that period. What hunter wouldn't like to go back to the 1890s, just for a day or two, to hunt prairie chickens from a horse-drawn wagon in western Kansas? Certainly the early days featured greater bird abundance, but most people of average means weren't able to pursue their sport beyond the region in which they lived. Perhaps the hunters of the 1940s to the 1960s had it best—stories by William Schaldach, Ray Holland, and Ted Trueblood come to mind—birds were still abundant and accessible, and competition for them was relatively light. In any event, the stories that make up Worth Mathewson's anthology make for great reading—and dreaming—while we wait for another bird season to roll around.

THE ORVIS GUIDE TO FIRST AID FOR SPORTING DOGS, by Chuck DeVinne, DVM, Willow Creek Press, P.O. Box 147, Minocqua, WI 54548 (800-850-9453); 2000, 128 pages, $16.95, hard cover.

A handy little book that fits nicely in a glove compartment or bird vest, this Orvis guide could save your dog's life. It covers, in clear and simple language, emergency procedures for treating and bandaging lacerations; applying tourniquets and splints; treating burns and wounds; applying eye ointment; performing artificial respiration; removing porcupine quills; treating snakebite, heat stroke, and hypothermia. Other Orvis field guides include "Shotgun Care and Maintenance," and the "Orvis Shooting School Method of Wingshooting." These guides all feature durable hard covers, color photos, and helpful illustrations.

FIELD GUIDE TO UPLAND BIRDS AND WATERFOWL, by Christopher S. Smith, Wilderness Adventures Press, 45 Buckskin Road, Belgrade, MT 59714 (800-925-3339); 2000, 154 pages, $19.95, soft cover.

This pocket field guide (4 X 7 inches) includes color illustrations of 23 upland game birds and 50 waterfowl species—every important game bird in North America. In addition, it contains a distribution map, a detailed description, and key identifying characteristics for each species. Waterfowlers, especially, will appreciate the detailed wing paintings showing feather coloration. This book, with its plasticized covers to protect it from the elements, belongs in the hunting vest or shooting bag of every upland bird and waterfowl hunter.

WILD COUNTRY: OUTDOOR POEMS FOR YOUNG PEOPLE, by David L. Harrison, Boyds Mills Press, 815 Church Street, Honesdale, PA 18431 (877-512-8366); 1999, 48 pages, hard cover, $14.95.

In this book for young people ages 9 and up, poet David Harrison takes readers on a trip to the mountains, into high country, through the forest, and down again to the edge of the sea. In "High Country," we meet Raven, who sings to us "sounds of old sadness and ancient truth," and in "Moose at Dusk" we stumble upon a moose in the forest, "like a phantom beast—high shouldered, massive, mute." Animals, insects, and birds featured in these engaging poems include elk, bears, salmon, caribou, butterflies, seagulls, sandpipers, seals, whales, and a host of others. Harrison has a knack for making the grandeur, mystery, and beauty of nature come alive.

Readers Respond

Special Centennial Issue Evokes Memories

I so much enjoyed the Centennial Issue of *Montana Outdoors*. As you know, I was a game warden in Roundup in 1941. My dad was sporting goods manager for Holter Hardware in Helena for 35 years, so we got to know a lot of the past FWP directors. I personally knew Bob Hill, Jack Carney, Jim McFarland, Walt Everin, and particularly Archie O'Claire. Archie and I were involved with a special live trapping project for beaver on Flatwillow Creek out of Roundup. The program objective was to trap and transplant the beaver, which were giving the rancher a problem.

Looking back, Montana has come a long way in pioneering new programs concerning conservation of fish and game. Bob Cooney is a good friend of mine—one of the best.

Montana will always be home. As the saying goes, "You can take a man out of the mountains, but you can't take the mountains out of the man."—*Ben Wahle, Burlingame, California*

When I returned from my latest hunt the other day the November/December 2000 issue of *Montana Outdoors* was waiting for me. Like I often do, I started to give it a cursory look-see with the thought of returning to it later on. This issue got me trapped immediately and I read it from cover to cover. I want you to know that I think you did an outstanding job. What you and your staff did is provide Montanans, and every other interested party, a factual and complete part of a wonderful heritage we've inherited.

I realized quickly how fortunate I've been to have lived in this state my whole life and even had the privilege to have worked with a number of the people you referred to in the various sections.

I also thought how wonderful it would be if our young people here in Montana could have access to the information contained in this issue. Not knowing for sure how or even if this magazine gets circulated in our school system I would like for you to consider the possibility of getting it distributed. Further, if it's a case of financing the magazine's distribution, I for one would be glad to contribute. And I'm certain others would help also.

Thanks again for a job very well done.—*Bob Gibson, Bozeman*

Your suggestion on getting the issue distributed to Montana schools is a good one. We increased our press run so FWP's Conservation Education Division could use the magazine for that purpose.—Editor

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I enjoyed no end reading your fascinating account of the history of FWP in the recent *Montana Outdoors*. We are regular subscribers and always enjoy many of the articles and the pictures. However, this one was special because of the historical account of progress dealing with the myriad challenges that have faced Montana's fish and game resources. Even some of the stuff I was involved in as pollution control biologist during 1961-62 was cited (DDT in the Boulder, pulp mill waste in the Clark Fork). No question, the dedication of people in the agency has been amazing and I am grateful to have known and worked with some of them.

The quotes from Harold Picton were interesting. I was fisheries biologist when he was game biologist in Great Falls in 1959-61.

This issue would have greatly interested the late Robert Averett, who preceded me as pollution control biologist and was involved in the cited Clark Fork mine waste experience.—*Eugene Welch, Redmond, Washington*

Congratulations on an outstanding Centennial Issue of *Montana Outdoors*! Having grown up as a part of the Fish, Wildlife & Parks family (although it will always be Fish and Game to me), your chronology of the first century of the agency's history brought back many of the stories and personalities from my childhood days in Montana. Since a number of the key individuals who shaped the department's legacy have recently passed away (including my father), I appreciate your efforts to capture some of the history of this remarkable organization. All of us who enjoy the "blue ribbon" recreational opportunities in Montana today owe them, and you, our heartfelt thanks!—*Gary Whitney, Portland, Oregon*

Gary's father was Art Whitney, long-time administrator of the Fisheries Division.—Editor

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I really enjoyed the November/December issue of *Montana Outdoors*. Putting together a hundred years of progress in one edition was quite an accomplishment.

We welcome your comments as well as letters to the editor. Please write us at: Readers Respond, Montana Outdoors, 930 West Custer Avenue, P.O. Box 200701, Helena, MT 59620-0701; fax 406-443-4619; e-mail montanaoutdoors@state.mt.us.

Readers Respond

However, there was something missing; you never mentioned the Civilian Conservation Corps (C.C.C). In West Virginia, we had hundreds of C.C.C. workers who built most of our State Parks, complete with administration buildings, lodges, and rustic cabins. Surely, Montana had C.C.C. groups. Many of the men who served in the C.C.C. became some of our leading citizens.—*James Bowyer, Mount Nebo, West Virginia*

As you surmise, Montana did have an active Civilian Conservation Corps in the 1930s and early 1940s. They played an instrumental role in development of Lewis and Clark Caverns, Montana's first state park, and many other projects. Thanks for reminding us.—Editor

I enjoyed your Centennial Issue. However, I believe there is one error about largemouth bass being introduced in 1904, as stated on page 6. I have attached several newspaper clippings from the *Libby News* printed in 1900 that describe planting largemouth in the Kootenai River that year.—*Joe E. Huston, Kalispell*

Thanks for such a great issue of *Montana Outdoors*. The Centennial Issue was not the usual format, but that doesn't mean it wasn't readable. Dave and Pat did a very good job of talking about the past and the future. Montana is lucky to have such able and dedicated people.—*John Jaeger, Sandpoint, Idaho*

Readers Vote "Thumbs Up" on Photo Issue

Thank you for my January/February issue of *Montana Outdoors*. I am one of those "picture people" you refer to in your editorial column. Please do not change your format of the January issue consisting of ALL pictures. Some of us wait all year for that issue. When the weather is cold and cloudy and winter seems to just drag on, that issue can sure brighten your outlook on life and perk you up. It reminds us why we live in Montana. After I read my copy, I take it to work for others to enjoy. When everybody has viewed it then it gets mailed to friends in Japan and Germany. So your January issue is well traveled and much enjoyed. People really look forward to getting it every year.

Keep up the good work. Thank you.—*Sue Irwin, Victor*

What great photos in your January/February 2001 issue. In the introduction to this issue you mention the annual debate as to whether to have one issue per year devoted entirely to photography.

I encourage you to continue the current practice even though you express concern that the pictures take space you could be using to get out your message of what you do and why you should be doing it. Indeed, publishing the pictures does, in fact, get out the story of what you folks are protecting, does give convincing evidence of why your stewardship of these assets is required.

However, I have one criticism of the way you've presented the photos in this issue. You have treated the photo credits almost as if they are a necessary evil, using very, very small type to identify the photographers, sometimes printing the names sidewise (vertically aligned) and identifying some of the shooters with a "dot.com" sort of label.

It may surprise you, as an editor, that some of us out here are very interested in who took these pictures and where they live. In fact, I would suggest to you that you not only more prominently display the names of the photographers, but that you add the name of the city in which they live. This would, I believe, give a more personal touch and let the reader resonate more fully with the images.

Also, if the person (such as Denver Bryan) has a Web site, then you could use a line of photo-credit to state the Web site in addition to the name and home town of the photographer (Bozeman, in the case of Denver Bryan). This would be a better alternative, I think, than "DENVERBRYAN.COM," for instance, as the sole identification of the photographer.

You guys do a mighty fine job with the magazine. Keep up the good work.—*Paul Arnold, Dillon*

I have been subscribing to *Montana Outdoors* for many years. This is a fine magazine. I really enjoy the January-February issue every year. The photography is excellent and the choice of pictures great. I lived a great deal of my life in Kalispell and really enjoyed the beauty of the Flathead Valley and surrounding areas.

After moving to the Coast, I realize I really miss the grandeur of Montana. Were it not for my subscription to *Montana Outdoors*, I think I would be totally lost. The best money I ever spent was to buy a subscription to your magazine.

I look forward to looking at great photography and reading the very good articles in your magazine. Please keep up the good work.

A faithful subscriber.—*Harold Johns, Roseburg, Oregon*

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MARKET

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This preshrunk, 100% cotton, long-sleeve shirt can be worn alone or as a base for layering. Available in *natural, leaf,* and *lake (shown),* with embroidered mule deer, in sizes M, L, XL. **ITEM #1301-6 $29.95**

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blue *natural*

Golf Shirt

With contrasting collar, cuffs, and placket, this 100% combed cotton pique golf shirt is available in *forest green/wine/navy; wine/forest/navy (shown);* and *jade/concord/royal.* Comes with embroidered Montana Outdoors logo; available in sizes M, L, XL.
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forest green/wine/navy *wine/forest/navy* *jade/concord/royal*

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ash *sage* *straw* *forest green*

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Contributors

Animals that live together establish "laws" of social behavior that enable them to coexist with a minimum of squabbling. They do this, says **Sam Curtis**, "by occasionally fighting to establish a pecking order, but mainly by displaying and communicating social etiquette." For examples of how group living benefits animals ranging in size from ladybugs to mule deer, and how order is maintained, turn to "Social Arrangements by Peck & Peck" beginning on page 7. Curtis is a Bozeman-base free-lancer whose articles on natural history appear often in *Montana Outdoors*.

In February, most of the birds that brighten Montana's summer landscape are long gone. Perhaps that's why we appreciate those that remain here all the more. In his poignant account of fishing the Madison River one snowy day in the company of "A Singular Bird" (p. 12), **Jerry Kustich** describes the Townsend's solitaire, a "dapper-looking gray bird that often goes unnoticed." Despite its drab overall appearance, says Kustich, "to those who know and appreciate it, the Townsend's solitaire is a beautiful bird." A writer, birder, and avid angler, Kustich lives in Twin Bridges.

Kustich

To honor FWP's 100-year anniversary, this year's Montana Migratory Bird Stamp competition called for ducks or geese flying above a steamboat like those plying the Missouri River in the late 1800s. To capture the mood, contest winner Cliff M. Rossberg of Great Falls made three trips to Fort Benton to gather landscape and historical detail for his painting of Canada geese. "Of all waterfowl species," says Rossberg, "few look as powerful and graceful as Canada geese lifting off. This piece displays the landscape at the port of Fort Benton in the late 1800s." FWP information bureau chief **Tom Palmer**, who wrote the article accompanying the top contest entries, describes the stamp program and how it contributes to waterfowl conservation in his article on page 16.

If you're a beginning turkey hunter you can learn a lot about tactics and calling from an instructional video, but when you get to the woods it doesn't hurt to have a healthy dose of beginner's luck. At least that's what **Cheryl Fraser** and her friend Dar discovered on their somewhat unconventional first-time turkey outing. Tag along with them in "Turkey Trot" (p. 18), a hilarious account of a successful hunt that began with less-than-lofty expectations. Fraser is a free-lance writer, artist, and small business owner who lives in Montana City.

Fraser

"You can search the world," says **John Fraley**, "but you won't find a more unusual amphibian than Montana's tailed frog." This half-dollar-sized creature is an anomaly in the frog world—it has no voice and it can't stick out its tongue. Limited to small, clear streams in the western part of the state, the "Frog with a Tail" (p. 21) and its curious tadpoles are fun for kids to find and observe. "The tadpoles are not as easy to catch as you might think," says John's son, **Kevin**, who wrote the "Kid's-Eye View" sidebar accompanying the article. "The tadpole darts around at high speed, moving its tail rapidly back and forth just like a fish." John Fraley is the information officer for FWP's Region 1 and Kevin is a fifth-grader at Edgerton School in Kalispell.

John and Kevin Fraley

According to **Zoe King and Rob Brooks**, Montana elk hunters are unanimous in their desire to enjoy solitude, pleasant scenery, and a natural setting—in short, they love being outdoors and "getting away from it all." That fact emerged from a recent survey of resident and nonresident elk hunters designed to determine age, income, and other demographic factors, and assess the economic value of elk hunting to the state's economy. For a detailed look at Montana's "average" elk hunter, and how he or she has changed since the last survey in 1986, turn to "Profile of an Elk Hunter" beginning on page 23. King is a statistical technician in FWP's Responsive Management Unit and Brooks is the unit coordinator; both work at the Helena headquarters.

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